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# SEQUENCE LISTING

<110> Mack, David H.  
Gish, Kurt C.  
Afar, Daniel  
Eos Biotechnology, Inc.

<120> Methods of Diagnosis of Breast Cancer, Compositions and  
Methods of Screening for Modulators of Breast Cancer

<130> 018501-005210US

<140> US 10/058,270

<141> 2002-01-24

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<150> US 60/265,928

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 <212> PRT  
 <213> Homo sapiens

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Thr Asp Gly Tyr Cys Phe Thr Met Ile Glu Glu Asp Asp Ser Gly Leu
      50             55             60

Pro Val Val Thr Ser Gly Cys Leu Gly Leu Glu Gly Ser Asp Phe Gln
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Cys Arg Asp Thr Pro Ile Pro His Gln Arg Arg Ser Ile Glu Cys Cys
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Thr Glu Arg Asn Glu Cys Asn Lys Asp Leu His Pro Thr Leu Pro Pro
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Leu Lys Asn Arg Asp Phe Val Asp Gly Pro Ile His His Arg Ala Leu
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Leu Ile Ser Val Thr Val Cys Ser Leu Leu Leu Val Leu Ile Ile Leu
      130            135            140

Phe Cys Tyr Phe Arg Tyr Lys Arg Gln Glu Thr Arg Pro Arg Tyr Ser
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Ile Gly Leu Glu Gln Asp Glu Thr Tyr Ile Pro Pro Gly Glu Ser Leu
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Gly	Glu	Lys	Val	Ala	Val	Lys	Val	Phe	Phe	Thr	Thr	Glu	Glu	Ala	Ser	225	230	235	240
Trp	Phe	Arg	Glu	Thr	Glu	Ile	Tyr	Gln	Thr	Val	Leu	Met	Arg	His	Glu	245	250	255	
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Tyr	Ser	Phe	Gly	Leu	Ile	Leu	Trp	Glu	Val	Ala	Arg	Arg	Cys	Val	Ser	405	410	415	
Gly	Gly	Ile	Val	Glu	Glu	Tyr	Gln	Leu	Pro	Tyr	His	Asp	Leu	Val	Pro	420	425	430	
Ser	Asp	Pro	Ser	Tyr	Glu	Asp	Met	Arg	Glu	Ile	Val	Cys	Ile	Lys	Lys	435	440	445	
Leu	Arg	Pro	Ser	Phe	Pro	Asn	Arg	Trp	Ser	Ser	Asp	Glu	Cys	Leu	Arg	450	455	460	
Gln	Met	Gly	Lys	Leu	Met	Thr	Glu	Cys	Trp	Ala	His	Asn	Pro	Ala	Ser	465	470	475	480
Arg	Leu	Thr	Ala	Leu	Arg	Val	Lys	Lys	Thr	Leu	Ala	Lys	Met	Ser	Glu	485	490	495	

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Arg Leu Lys Val Leu Ile Leu Asn Asp Asn Ala Ile Glu Ser Leu Pro  
165 170 175  
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Asn Gln Leu Gln Thr Leu Pro Tyr Val Gly Phe Leu Glu His Ile Gly  
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Arg Ile Leu Asp Leu Gln Leu Glu Asp Asn Lys Trp Ala Cys Asn Cys  
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Asp Leu Leu Gln Leu Lys Thr Trp Leu Glu Asn Met Pro Pro Gln Ser  
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 Ala Ala Gly Ile Val Val Leu Val Leu His Arg Arg Arg Arg Tyr Lys  
 625 630 635 640  
 Lys Lys Gln Val Asp Glu Gln Met Arg Asp Asn Ser Pro Val His Leu  
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 Gln Tyr Ser Met Tyr Gly His Lys Thr Thr His His Thr Thr Glu Arg  
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 Pro Ser Ala Ser Leu Tyr Glu Gln His Met Val Ser Pro Met Val His  
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 Val Tyr Arg Ser Pro Ser Phe Gly Pro Lys His Leu Glu Glu Glu Glu  
 690 695 700  
 Glu Arg Asn Glu Lys Glu Gly Ser Asp Ala Lys His Leu Gln Arg Ser  
 705 710 715 720  
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 Tyr Lys Thr Thr Asn Gln Ser Thr Glu Phe Leu Ser Phe Gln Asp Ala  
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 Ser Ser Leu Tyr Arg Asn Ile Leu Glu Lys Glu Arg Glu Leu Gln Gln  
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 Glu Thr Leu Met Tyr Ser Arg Pro Arg Lys Val Leu Val Glu Gln Thr  
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<210> 10
<211> 909
<212> PRT
<213> Homo sapiens

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Leu Trp Asn Glu Gly Arg Ala Asp Glu Val Val Ser Ala Ser Val Arg
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Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys Asn His
      50              55              60

Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu Leu Ile
      65              70              75              80

Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe Thr Glu
      85              90              95

Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg Asn Tyr
      100              105              110

Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg Gly Tyr
      115              120              125

Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg Gly Leu
      130              135              140

Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys Ser Ala
      145              150              155              160

Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser Val Arg
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Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala Lys Asn
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Arg	Glu	Phe	Gln	Arg	Gln	Gly	Lys	Asp	Leu	Glu	Lys	Val	Lys	Gln	Arg	
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Leu	Ile	Glu	Ile	Ala	Asn	His	Val	Asp	Lys	Phe	Tyr	Arg	Pro	Leu	Asn	
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Ile	Arg	Ile	Val	Leu	Val	Gly	Val	Glu	Val	Trp	Asn	Asp	Met	Asp	Lys	
			260					265					270			
Cys	Ser	Val	Ser	Gln	Asp	Pro	Phe	Thr	Ser	Leu	His	Glu	Phe	Leu	Asp	
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His	Ser	Asp	Asn	Pro	Leu	Gly	Ala	Ala	Val	Thr	Leu	Ala	His	Glu	Leu	
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Ala Arg Pro Leu Pro Ala Lys Pro Ala Leu Arg Gln Ala Gln Gly Thr  
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Cys Lys Pro Asn Pro Pro Gln Lys Pro Leu Pro Ala Asp Pro Leu Ala  
850 855 860

Arg Thr Thr Arg Leu Thr His Ala Leu Ala Arg Thr Pro Gly Gln Trp  
865 870 875 880

Glu Thr Gly Leu Arg Leu Ala Pro Leu Arg Pro Ala Pro Gln Tyr Pro  
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<211> 2514  
<212> DNA  
<213> Homo sapiens

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<210> 12
<211> 394
<212> PRT
<213> Homo sapiens

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      35              40              45

Asp Cys Arg Pro Phe Leu Ala His Ser Ala Gly Tyr Ile Leu Gly Ser
      50              55              60

Val Asn Val Arg Cys Asn Thr Ile Val Arg Arg Arg Ala Lys Gly Ser
      65              70              75              80

Val Ser Leu Glu Gln Ile Leu Pro Ala Glu Glu Glu Val Arg Ala Arg
          85              90              95

Leu Arg Ser Gly Leu Tyr Ser Ala Val Ile Val Tyr Asp Glu Arg Ser
      100              105              110

Pro Arg Ala Glu Ser Leu Arg Glu Asp Ser Thr Val Ser Leu Val Val
      115              120              125

Gln Ala Leu Arg Arg Asn Ala Glu Arg Thr Asp Ile Cys Leu Leu Lys
      130              135              140

Gly Gly Tyr Glu Arg Phe Ser Ser Glu Tyr Pro Glu Phe Cys Ser Lys
      145              150              155              160

Thr Lys Ala Leu Ala Ala Ile Pro Pro Pro Val Pro Pro Ser Ala Thr
          165              170              175

Glu Pro Leu Asp Leu Gly Cys Ser Ser Cys Gly Thr Pro Leu His Asp
          180              185              190

Gln Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Ser Ala
      195              200              205

Tyr His Ala Ala Arg Arg Asp Met Leu Asp Ala Leu Gly Ile Thr Ala
      210              215              220

Leu Leu Asn Val Ser Ser Asp Cys Pro Asn His Phe Glu Gly His Tyr
      225              230              235              240

Gln Tyr Lys Cys Ile Pro Val Glu Asp Asn His Lys Ala Asp Ile Ser
          245              250              255

Ser Trp Phe Met Glu Ala Ile Glu Tyr Ile Asp Ala Val Lys Asp Cys
          260              265              270

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 Arg Gly Lys Thr Pro Ala Thr Pro Thr Ser Gln Phe Val Phe Ser Phe  
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 <212> DNA  
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Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val Leu Pro Lys Trp Val  
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<212> DNA  
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<212> PRT  
<213> Homo sapiens

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35 40 45  
Ala Ser Met Thr Ala Asp Ser Lys Ala Ala Arg Leu Arg Arg Ile Glu  
50 55 60

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Arg	Ile	Leu	Thr	Lys	Met	Gln	Phe	Met	Lys	Tyr	Met	Val	Tyr	Pro	Gln	85	90	95	
Thr	Phe	Ala	Leu	Asn	Ala	Asp	Arg	Trp	Tyr	Gln	Tyr	Phe	Thr	Lys	Thr	100	105	110	
Val	Phe	Leu	Ser	Gly	Leu	Pro	Pro	Pro	Pro	Ala	Glu	Pro	Glu	Pro	Glu	115	120	125	
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Arg	Arg	Val	His	Arg	Tyr	Glu	Glu	Ser	Glu	Val	Ile	Ser	Leu	Pro	Phe	165	170	175	
Leu	Asp	Gln	Leu	Val	Ser	Thr	Leu	Val	Gly	Leu	Leu	Ser	Pro	His	Asn	180	185	190	
Pro	Ala	Leu	Ala	Ala	Ala	Ala	Leu	Asp	Tyr	Arg	Cys	Pro	Val	His	Phe	195	200	205	
Tyr	Trp	Val	Arg	Gly	Glu	Glu	Ile	Ile	Pro	Arg	Gly	His	Arg	Arg	Gly	210	215	220	
Arg	Ile	Asp	Asp	Leu	Arg	Tyr	Gln	Ile	Asp	Asp	Lys	Pro	Asn	Asn	Gln	225	230	235	240
Ile	Arg	Ile	Ser	Lys	Gln	Leu	Ala	Glu	Phe	Val	Pro	Leu	Asp	Tyr	Ser	245	250	255	
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Leu	Phe	Lys	Arg	Gln	Tyr	Glu	Asn	His	Ile	Phe	Val	Gly	Ser	Lys	Thr	275	280	285	
Ala	Asp	Pro	Cys	Cys	Tyr	Gly	His	Thr	Gln	Phe	His	Leu	Leu	Pro	Asp	290	295	300	
Lys	Leu	Arg	Arg	Glu	Arg	Leu	Leu	Arg	Gln	Asn	Cys	Ala	Asp	Gln	Ile	305	310	315	320
Glu	Val	Val	Phe	Arg	Ala	Asn	Ala	Ile	Ala	Ser	Leu	Phe	Ala	Trp	Thr	325	330	335	
Gly	Ala	Gln	Ala	Met	Tyr	Gln	Gly	Phe	Trp	Ser	Glu	Ala	Asp	Val	Thr	340	345	350	
Arg	Pro	Phe	Val	Ser	Gln	Ala	Val	Ile	Thr	Asp	Gly	Lys	Tyr	Phe	Ser	355	360	365	
Phe	Phe	Cys	Tyr	Gln	Leu	Asn	Thr	Leu	Ala	Leu	Thr	Thr	Gln	Ala	Asp	370	375	380	

Gln Asn Asn Pro Arg Lys Asn Ile Cys Trp Gly Thr Gln Ser Lys Pro  
 385 390 395 400

Leu Tyr Glu Thr Ile Glu Asp Asn Asp Val Lys Gly Phe Asn Asp Asp  
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Val Leu Leu Gln Ile Val His Phe Leu Leu Asn Arg Pro Lys Glu Glu  
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Lys Ser Gln Leu Leu Glu Asn  
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 <212> DNA  
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 <213> Homo sapiens

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 35 40 45  
 Leu Ala Ala Thr Leu Val Lys Phe Glu Cys Ala Gln Ser Glu Leu Gln  
 50 55 60  
 Asp Leu Arg Ser Lys Met Leu Ser Lys Glu Val Ser Cys Gln Glu Leu  
 65 70 75 80  
 Lys Ala Glu Met Glu Ser Tyr Lys Glu Asn Asn Ala Arg Lys Ser Ser  
 85 90 95  
 Leu Leu Thr Ser Leu Arg Asp Arg Val Gln Glu Leu Glu Glu Glu Ser  
 100 105 110  
 Ala Ala Leu Ser Thr Ser Lys Ile Arg Thr Glu Ile Thr Ala His Ala  
 115 120 125

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Glu	Lys	Leu	Gln	Lys	Cys	Ser	Lys	Glu	Asn	Glu	Glu	Asn	Lys	Lys	Gln	
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Val	Ser	Lys	Asn	Cys	Arg	Lys	His	Glu	Glu	Phe	Leu	Thr	Gln	Leu	Arg	
				165					170					175		
Asp	Cys	Leu	Asp	Pro	Asp	Glu	Arg	Asn	Asp	Lys	Ala	Ser	Asp	Glu	Asp	
			180					185					190			
Leu	Ile	Leu	Lys	Leu	Arg	Asp	Leu	Arg	Lys	Glu	Asn	Glu	Phe	Val	Lys	
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		210				215					220					
Ala	Lys	Ala	Ser	Arg	Glu	Thr	Ile	Met	Arg	Leu	Ala	Ser	Glu	Val	Asn	
225					230					235					240	
Arg	Glu	Gln	Lys	Lys	Ala	Ala	Ser	Cys	Thr	Glu	Glu	Lys	Glu	Lys	Leu	
				245					250						255	
Asn	Gln	Asp	Leu	Leu	Ser	Ala	Val	Glu	Ala	Lys	Glu	Ala	Leu	Glu	Arg	
			260					265					270			
Glu	Val	Lys	Ile	Phe	Gln	Glu	Arg	Leu	Leu	Ala	Gly	Gln	Gln	Val	Trp	
		275					280					285				
Asp	Ala	Ser	Lys	Gln	Glu	Val	Ser	Leu	Leu	Lys	Lys	Ser	Ser	Ser	Glu	
	290					295					300					
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Ser	Gln	Tyr	Ser	Ser	Phe	Arg	Glu	Lys	Ile	Ala	Ala	Leu	Leu	Arg	Gly	
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		355					360					365				
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		370				375					380					
Gly	Phe	His	Gln	Lys	Ala	Leu	Gln	Arg	Ala	Gln	Lys	Ala	Glu	Asn	Met	
385					390					395					400	
Leu	Glu	Thr	Leu	Gln	Gly	Gln	Leu	Thr	His	Leu	Glu	Ala	Glu	Leu	Val	
				405					410					415		
Ser	Gly	Gly	Val	Leu	Arg	Asp	Asn	Leu	Asn	Phe	Glu	Lys	Gln	Lys	Tyr	
			420					425					430			
Leu	Lys	Phe	Leu	Asp	Gln	Leu	Ser	Gln	Lys	Met	Lys	Leu	Asp	Gln	Met	
		435					440					445				

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 Thr Glu Gln Leu Val Arg Leu Glu Ser Asn Ala Val Ile Glu Asn Lys  
 465 470 475 480  
 Thr Ile Ala His Asn Leu Gln Arg Lys Leu Lys Thr Gln Lys Glu Arg  
 485 490 495  
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 500 505 510  
 Gln Leu Glu Glu Glu Lys Gln Ala Arg Thr Ala Leu Val Val Glu Arg  
 515 520 525  
 Asp Asn Ala His Leu Thr Ile Arg Asn Leu Gln Lys Lys Val Glu Arg  
 530 535 540  
 Leu Gln Lys Glu Leu Asn Thr Cys Arg Asp Leu His Thr Glu Leu Lys  
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 Ala Lys Leu Ala Asp Thr Asn Glu Leu Lys Ile Lys Thr Leu Glu Gln  
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 Thr Lys Ala Ile Glu Asp Leu Asn Lys Ser Arg Asp Gln Leu Glu Lys  
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 Met Lys Glu Lys Ala Glu Lys Lys Leu Met Ser Val Lys Ser Glu Leu  
 595 600 605  
 Asp Thr Thr Glu His Glu Ala Lys Glu Asn Lys Glu Arg Ala Arg Asn  
 610 615 620  
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 Glu Glu Ala Glu Lys Arg Glu Lys Gln Leu Ala Asp Phe Arg Glu Val  
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 Val Ser Gln Met Leu Gly Leu Asn Val Thr Ser Leu Ala Leu Pro Asp  
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 Tyr Glu Ile Ile Lys Cys Leu Glu Arg Leu Val His Ser His Gln His  
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 <212> DNA  
 <213> Homo sapiens

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<210> 20  
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 <212> PRT  
 <213> Homo sapiens

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Arg Ala Val Pro Phe Glu Asn Leu Asn Ile His Cys Gly Asp Ala Met
      35              40              45

Asp Leu Gly Leu Glu Ala Ile Phe Asp Gln Val Val Arg Arg Asn Arg
      50              55              60

Gly Gly Trp Cys Leu Gln Val Asn His Leu Leu Tyr Trp Ala Leu Thr
      65              70              75              80

Thr Ile Gly Phe Glu Thr Thr Met Leu Gly Gly Tyr Val Tyr Ser Thr
      85              90              95

Pro Ala Lys Lys Tyr Ser Thr Gly Met Ile His Leu Leu Leu Gln Val
      100             105             110

Thr Ile Asp Gly Arg Asn Tyr Ile Val Asp Ala Gly Phe Gly Arg Ser
      115             120             125

Tyr Gln Met Trp Gln Pro Leu Glu Leu Ile Ser Gly Lys Asp Gln Pro
      130             135             140

Gln Val Pro Cys Val Phe Arg Leu Thr Glu Glu Asn Gly Phe Trp Tyr
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			180					185					190		
Thr	Leu	Lys	Pro	Arg	Thr	Ile	Glu	Asp	Phe	Glu	Ser	Met	Asn	Thr	Tyr
		195					200					205			
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Leu	Gln	Thr	Pro	Asp	Gly	Val	His	Cys	Leu	Val	Gly	Phe	Thr	Leu	Thr
225					230					235					240
His	Arg	Arg	Phe	Asn	Tyr	Lys	Asp	Asn	Thr	Asp	Leu	Ile	Glu	Phe	Lys
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Thr	Leu	Ser	Glu	Glu	Glu	Ile	Glu	Lys	Val	Leu	Lys	Asn	Ile	Phe	Asn
			260					265					270		
Ile	Ser	Leu	Gln	Arg	Lys	Leu	Val	Pro	Lys	His	Gly	Asp	Arg	Phe	Phe
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 <212> DNA  
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 <212> PRT  
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 Ala Gln Gly Lys Ser Phe Ile Lys Asp Ala Leu Lys Cys Lys Ala His  
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 Ala Leu Arg His Arg Phe Gly Cys Ile Ser Arg Lys Cys Pro Ala Ile  
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 His Phe Lys Asp Leu Leu Leu His Glu Pro Tyr Val Asp Leu Val Asn  
 165 170 175  
 Leu Leu Leu Thr Cys Gly Glu Glu Val Lys Glu Ala Ile Thr His Ser  
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 Val Gln Val Gln Cys Glu Gln Asn Trp Gly Ser Leu Cys Ser Ile Leu  
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 Ser Phe Cys Thr Ser Ala Ile Gln Lys Pro Pro Thr Ala Pro Pro Glu  
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 Arg Gln Pro Gln Val Asp Arg Thr Lys Leu Ser Arg Ala His His Gly  
 225 230 235 240  
 Glu Ala Gly His His Leu Pro Glu Pro Ser Ser Arg Glu Thr Gly Arg  
 245 250 255

Gly Ala Lys Gly Glu Arg Gly Ser Lys Ser His Pro Asn Ala His Ala  
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Arg Gly Arg Val Gly Gly Leu Gly Ala Gln Gly Pro Ser Gly Ser Ser  
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<210> 23

<211> 2560

<212> DNA

<213> Homo sapiens

<400> 23

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<210> 24  
 <211> 465  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
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                   20                  25                  30  
 Ser Asp Gln Cys Leu Lys Glu Gln Ser Cys Ser Thr Lys Tyr Arg Thr  
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 Leu Arg Gln Cys Val Ala Gly Lys Glu Thr Asn Phe Ser Leu Ala Ser  
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 Gly Leu Glu Ala Lys Asp Glu Cys Arg Ser Ala Met Glu Ala Leu Lys  
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 Gln Lys Ser Leu Tyr Asn Cys Arg Cys Lys Arg Gly Met Lys Lys Glu  
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 Lys Asn Cys Leu Arg Ile Tyr Trp Ser Met Tyr Gln Ser Leu Gln Gly  
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 Asn Asp Leu Leu Glu Asp Ser Pro Tyr Glu Pro Val Asn Ser Arg Leu  
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 Val Glu His Ile Pro Lys Gly Asn Asn Cys Leu Asp Ala Ala Lys Ala  
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 Cys Asn Leu Asp Asp Ile Cys Lys Lys Tyr Arg Ser Ala Tyr Ile Thr  
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 His Lys Ala Leu Arg Gln Phe Phe Asp Lys Val Pro Ala Lys His Ser  
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 Arg Arg Gln Thr Ile Val Pro Val Cys Ser Tyr Glu Glu Arg Glu Lys  
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 Pro Asn Cys Leu Asn Leu Gln Asp Ser Cys Lys Thr Asn Tyr Ile Cys  
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 Arg Ser Arg Leu Ala Asp Phe Phe Thr Asn Cys Gln Pro Glu Ser Arg  
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 Ser Val Ser Ser Cys Leu Lys Glu Asn Tyr Ala Asp Cys Leu Leu Ala  
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Tyr Ser Gly Leu Ile Gly Thr Val Met Thr Pro Asn Tyr Ile Asp Ser  
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 Ser Ser Leu Ser Val Ala Pro Trp Cys Asp Cys Ser Asn Ser Gly Asn  
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 Cys Leu Lys Asn Ala Ile Gln Ala Phe Gly Asn Gly Ser Asp Val Thr  
 340 345 350  
 Val Trp Gln Pro Ala Phe Pro Val Gln Thr Thr Thr Ala Thr Thr Thr  
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 Thr Ala Leu Arg Val Lys Asn Lys Pro Leu Gly Pro Ala Gly Ser Glu  
 370 375 380  
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 385 390 395 400  
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 405 410 415  
 Asn Gly Asn Tyr Glu Lys Glu Gly Leu Gly Ala Ser Ser His Ile Thr  
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 Thr Lys Ser Met Ala Ala Pro Pro Ser Cys Gly Leu Ser Pro Leu Leu  
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 Val Leu Val Val Thr Ala Leu Ser Thr Leu Leu Ser Leu Thr Glu Thr  
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Ser  
 465

<210> 25  
 <211> 1576  
 <212> DNA  
 <213> Homo sapiens

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<210> 26  
 <211> 524  
 <212> PRT  
 <213> Homo sapiens

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Arg Gly Leu Leu Glu Asp Glu Arg Ala Leu Gln Leu Ala Leu Asp Gln
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Leu Cys Leu Leu Gly Leu Gly Glu Pro Pro Ala Pro Arg Ala Gly Glu
      50              55              60

Asp Gly Gly Gly Gly Gly Gly Gly Ala Pro Ala Gln Pro Thr Ala Pro
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Pro Gln Pro Ala Pro Pro Pro Pro Pro Ala Ala Pro Pro Ala Ala Pro
      85              90              95

Thr Thr Ala Pro Ala Ala Gln Thr Pro Gln Pro Pro Thr Ala Pro Lys
      100             105             110

Gly Ala Ser Asp Ala Lys Leu Cys Ala Leu Tyr Lys Glu Ala Glu Leu
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Arg Leu Lys Gly Ser Ser Asn Thr Thr Glu Cys Val Pro Val Pro Thr
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Ser Glu His Val Ala Glu Ile Val Gly Arg Gln Gly Cys Lys Ile Lys
      145             150             155             160

Ala Leu Arg Ala Lys Thr Asn Thr Tyr Ile Lys Thr Pro Val Arg Gly
      165             170             175

Glu Glu Pro Val Phe Met Val Thr Gly Arg Arg Glu Asp Val Ala Thr
      180             185             190

Ala Arg Arg Glu Ile Ile Ser Ala Ala Glu His Phe Ser Met Ile Arg
      195             200             205

Ala Ser Arg Asn Lys Ser Gly Ala Ala Phe Gly Val Ala Pro Ala Leu
      210             215             220

Pro Gly Gln Val Thr Ile Arg Val Arg Val Pro Tyr Arg Val Val Gly
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<400> 27

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<210> 28

<211> 689

<212> PRT

<213> Homo sapiens

<400> 28

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  20              25              30

Ser Leu Arg Pro Gln Ser Pro Gln Leu Arg Gln Ser Asp Pro Gln Lys
  35              40              45

Arg Asn Leu Asp Leu Glu Lys Ser Leu Gln Phe Leu Gln Gln Gln His
  50              55              60

Ser Glu Met Leu Ala Lys Leu His Glu Glu Ile Glu His Leu Lys Arg
  65              70              75              80

Glu Asn Lys Gly Glu Pro Ala Arg Gly Pro Arg Pro Ala Leu Pro Pro
  85              90              95
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 Glu Pro Gly Gly Pro Ser Pro Ala Arg Leu Lys Glu Gly Ser Ser Arg  
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 Thr His Arg Pro Gly Gly Lys Arg Gly Arg Leu Ala Gly Gly Ser Ala  
 450 455 460  
 Asp Thr Val Arg Ser Pro Ala Asp Ser Leu Ser Met Ser Ser Phe Gln  
 465 470 475 480  
 Ser Val Lys Ser Ile Ser Asn Ser Ala Asn Ser Gln Gly Lys Ala Arg  
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 Pro Gln Pro Gly Ser Phe Asn Lys Gln Asp Ser Lys Ala Asp Val Ser  
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 515 520 525  
 Asp Lys Val Pro Gly Val Gln Gly Gln Ala Arg Lys Glu Lys Ala Glu  
 530 535 540  
 Ala Ser Asn Ala Gly Ala Ala Cys Met Gly Asn Ser Gln His Gln Gly  
 545 550 555 560  
 Arg Gln Met Gly Ala Gly Ala His Pro Pro Met Ile Leu Pro Leu Pro  
 565 570 575  
 Leu Arg Lys Pro Thr Thr Leu Arg Gln Cys Glu Val Leu Ile Arg Glu  
 580 585 590  
 Leu Trp Asn Thr Asn Leu Leu Gln Thr Gln Glu Leu Arg His Leu Lys  
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 610 615 620  
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 Lys Ser Leu Ser Lys Lys Cys Leu Ser Pro Pro Val Ala Glu Arg Ala  
 645 650 655  
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Leu

<210> 29  
 <211> 3461  
 <212> DNA  
 <213> Homo sapiens

<400> 29

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 Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg  
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 Asn Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr  
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 625 630 635 640  
 Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln  
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 Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp  
 675 680 685  
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<212> PRT
<213> Homo sapiens

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Val Leu Lys Glu Lys Cys Met Asp Tyr Phe His Val Asn Ala Asn Tyr
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Ile Val Trp Lys Thr Asn His Phe Thr Ile Pro Lys Glu Gln Tyr Thr
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Ile Ile Asn Arg Thr Ala Ser Ser Val Thr Phe Thr Asp Ile Ala Ser
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Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu Thr Phe Gly Gln Leu Glu
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Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser Gly Leu Pro Pro Glu Lys
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Phe	Pro	Lys	Asp	Asn	Met	Leu	Trp	Val	Glu	Trp	Thr	Thr	Pro	Arg	Glu		
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 Met Lys Met Phe Gln Glu Val Ser Ala Ala Asp Ala Phe Gly Pro Gly  
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 Thr Glu Gly Gln Val Glu Arg Phe Glu Thr Val Gly Met Glu Ala Ala  
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<212> PRT
<213> Homo sapiens

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Ala Phe Gly Thr Ser Cys Ser Val Val Leu Tyr Asp Pro Leu Lys Arg
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Val Val Val Thr Asn Leu Asn Gly His Thr Ala Arg Val Asn Cys Ile
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Gln Trp Ile Cys Lys Gln Asp Gly Ser Pro Ser Thr Glu Leu Val Ser
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Gly Gly Ser Asp Asn Gln Val Ile His Trp Glu Ile Glu Asp Asn Gln
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Leu Leu Lys Ala Val His Leu Gln Gly His Glu Gly Pro Val Tyr Ala
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Val His Ala Val Tyr Gln Arg Arg Thr Ser Asp Pro Ala Leu Cys Thr
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Leu Ile Val Ser Ala Ala Ala Asp Ser Ala Val Arg Leu Trp Ser Lys
          130                      135                      140

Lys Gly Pro Glu Val Met Cys Leu Gln Thr Leu Asn Phe Gly Asn Gly
          145                      150                      155                      160

Phe Ala Leu Ala Leu Cys Leu Ser Phe Leu Pro Asn Thr Asp Val Pro
          165                      170                      175

Ile Leu Ala Cys Gly Asn Asp Asp Cys Arg Ile His Ile Phe Ala Gln
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Val	Arg	Leu	Leu	Ser	Ala	Ser	Met	Asp	Lys	Thr	Met	Ile	Leu	Trp	Ala	
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Pro	Asp	Glu	Glu	Ser	Gly	Val	Trp	Leu	Glu	Gln	Val	Arg	Val	Gly	Glu	
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Val	Gly	Gly	Asn	Thr	Leu	Gly	Phe	Tyr	Asp	Cys	Gln	Phe	Asn	Glu	Asp	
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Pro	Trp	Lys	Arg	Lys	Asp	Gln	Ser	Gln	Val	Thr	Trp	His	Glu	Ile	Ala	
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Asp	Ile	Ala	Ser	Gln	Pro	Ser	Asp	Glu	Glu	Glu	Leu	Leu	Thr	Ser	Thr		
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Asn	Glu	Lys	Phe	Leu	Leu	Ala	Val	Ser	Arg	Asp	Arg	Thr	Trp	Ser	Leu		
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Trp	Lys	Lys	Gln	Asp	Thr	Ile	Ser	Pro	Glu	Phe	Glu	Pro	Val	Phe	Ser		
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Leu	Phe	Ala	Phe	Thr	Asn	Lys	Ile	Thr	Ser	Val	His	Ser	Arg	Ile	Ile		
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Cys	Val	Glu	Thr	Ser	Gln	Ser	Gln	Ser	His	Thr	Leu	Ala	Ile	Arg	Lys		
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 <212> DNA  
 <213> Homo sapiens

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 <213> Homo sapiens

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Leu Ala Ala Lys Val Asn Lys His Lys Pro Trp Ile Glu Thr Ser Tyr
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His Gly Val Ile Thr Glu Asn Asn Asp Thr Val Ile Leu Asp Pro Pro
    50                      55                      60

Leu Val Ala Leu Asp Lys Asp Ala Pro Val Pro Phe Ala Gly Glu Ile
    65                      70                      75                      80

Cys Ala Phe Lys Ile His Gly Gln Glu Leu Pro Phe Glu Ala Val Val
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Leu Asn Lys Thr Ser Gly Glu Gly Arg Leu Arg Ala Lys Ser Pro Ile
    100                      105                      110

Asp Cys Glu Leu Gln Lys Glu Tyr Thr Phe Ile Ile Gln Ala Tyr Asp
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Cys Gly Ala Gly Pro His Glu Thr Ala Trp Lys Lys Ser His Lys Ala
    130                      135                      140

Val Val His Ile Gln Val Lys Asp Val Asn Glu Phe Ala Pro Thr Phe
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 Ser Gln Ile Cys Asn Tyr Glu Ile Val Thr Thr Asp Val Pro Phe Ala  
 195 200 205  
 Ile Asp Arg Asn Gly Asn Ile Arg Asn Thr Glu Lys Leu Ser Tyr Asp  
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 Lys Gln His Gln Tyr Glu Ile Leu Val Thr Ala Tyr Asp Cys Gly Gln  
 225 230 235 240  
 Lys Pro Ala Ala Gln Asp Thr Leu Val Gln Val Asp Val Lys Pro Val  
 245 250 255  
 Cys Lys Pro Gly Trp Gln Asp Trp Thr Lys Arg Ile Glu Tyr Gln Pro  
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 Gln Ala Asp Thr Phe Arg Pro Ala Glu Phe His Trp Lys Leu Asp Gln  
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 Ile Cys Asp Lys Glu Trp His Tyr Tyr Val Ile Asn Val Glu Phe Pro  
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Gln	Phe	Phe	His	Gly	Ser	Leu	Ala	Ser	Leu	Thr	Ile	Arg	Pro	Gly	Lys			
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Met	Glu	Ser	Gln	Lys	Val	Ile	Ser	Cys	Leu	Gln	Ala	Cys	Lys	Glu	Gly			
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Phe	Asn	Pro	Ser	Gln	Ser	Ile	Leu	Val	Met	Glu	Gly	Asp	Asp	Ile	Gly			
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Asn	Ile	Asn	Arg	Ala	Leu	Gln	Lys	Val	Ser	Tyr	Ile	Asn	Ser	Arg	Gln			
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Phe	Pro	Thr	Ala	Gly	Val	Arg	Arg	Leu	Lys	Val	Ser	Ser	Lys	Val	Gln			
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Cys	Phe	Gly	Glu	Asp	Val	Cys	Ile	Ser	Ile	Pro	Glu	Val	Asp	Ala	Tyr			
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Asp	His	Phe	Trp	Arg	Pro	Ala	Ala	Gln	Phe	Glu	Ser	Ala	Arg	Gly	Val			
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Leu	Thr	Ile	Thr	Val	Asn	Pro	Met	Glu	Lys	His	Glu	Gly	Pro	Gly	His	
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Gly	Glu	Asp	Glu	Thr	Glu	Gly	Glu	Glu	Glu	Glu	Glu	Ala	Glu	Glu	Glu	
			900					905					910			
Met	Ser	Ser	Ser	Ser	Gly	Ser	Asp	Asp	Ser	Glu	Glu	Glu	Glu	Glu	Glu	
		915					920					925				
Glu	Gly	Met	Gly	Arg	Gly	Arg	His	Gly	Gln	Asn	Gly	Ala	Arg	Gln	Ala	
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Gln	Leu	Glu	Trp	Asp	Asp	Ser	Thr	Leu	Pro	Tyr						
945					950					955						

<210> 37  
 <211> 1284  
 <212> DNA  
 <213> Homo sapiens

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 <211> 243  
 <212> PRT  
 <213> Homo sapiens

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 Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg Glu Val Val  
           35                  40                  45  
 Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly Val Pro Gly  
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 Arg Asp Gly Ser Pro Gly Ala Asn Gly Ile Pro Gly Thr Pro Gly Ile  
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 Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys Leu Arg Glu  
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 Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys Ser Trp Ser  
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 Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu Cys Thr Phe  
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 Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe Ser Gly Ser  
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 Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile  
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 Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His  
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 Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu  
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 Val Asp Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly  
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 Leu Pro Lys

<210> 39  
 <211> 2723  
 <212> DNA  
 <213> Homo sapiens

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<210> 40
<211> 622
<212> PRT
<213> Homo sapiens

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<400> 40
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      20             25             30

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Ile	Phe	Lys	Cys	Arg	Ser	Pro	Asn	Lys	Glu	Thr	Phe	Thr	Cys	Trp	Trp	35	40	45
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His	Arg	Glu	Gly	Glu	Thr	Leu	Met	His	Glu	Cys	Pro	Asp	Tyr	Ile	Thr	65	70	75
Gly	Gly	Pro	Asn	Ser	Cys	His	Phe	Gly	Lys	Gln	Tyr	Thr	Ser	Met	Trp	85	90	95
Arg	Thr	Tyr	Ile	Met	Met	Val	Asn	Ala	Thr	Asn	Gln	Met	Gly	Ser	Ser	100	105	110
Phe	Ser	Asp	Glu	Leu	Tyr	Val	Asp	Val	Thr	Tyr	Ile	Val	Gln	Pro	Asp	115	120	125
Pro	Pro	Leu	Glu	Leu	Ala	Val	Glu	Val	Lys	Gln	Pro	Glu	Asp	Arg	Lys	130	135	140
Pro	Tyr	Leu	Trp	Ile	Lys	Trp	Ser	Pro	Pro	Thr	Leu	Ile	Asp	Leu	Lys	145	150	155
Thr	Gly	Trp	Phe	Thr	Leu	Leu	Tyr	Glu	Ile	Arg	Leu	Lys	Pro	Glu	Lys	165	170	175
Ala	Ala	Glu	Trp	Glu	Ile	His	Phe	Ala	Gly	Gln	Gln	Thr	Glu	Phe	Lys	180	185	190
Ile	Leu	Ser	Leu	His	Pro	Gly	Gln	Lys	Tyr	Leu	Val	Gln	Val	Arg	Cys	195	200	205
Lys	Pro	Asp	His	Gly	Tyr	Trp	Ser	Ala	Trp	Ser	Pro	Ala	Thr	Phe	Ile	210	215	220
Gln	Ile	Pro	Ser	Asp	Phe	Thr	Met	Asn	Asp	Thr	Thr	Val	Trp	Ile	Ser	225	230	235
Val	Ala	Val	Leu	Ser	Ala	Val	Ile	Cys	Leu	Ile	Ile	Val	Trp	Ala	Val	245	250	255
Ala	Leu	Lys	Gly	Tyr	Ser	Met	Val	Thr	Cys	Ile	Phe	Pro	Pro	Val	Pro	260	265	270
Gly	Pro	Lys	Ile	Lys	Gly	Phe	Asp	Ala	His	Leu	Leu	Glu	Lys	Gly	Lys	275	280	285
Ser	Glu	Glu	Leu	Leu	Ser	Ala	Leu	Gly	Cys	Gln	Asp	Phe	Pro	Pro	Thr	290	295	300
Ser	Asp	Tyr	Glu	Asp	Leu	Leu	Val	Glu	Tyr	Leu	Glu	Val	Asp	Asp	Ser	305	310	315
Glu	Asp	Gln	His	Leu	Met	Ser	Val	His	Ser	Lys	Glu	His	Pro	Ser	Gln	325	330	335
Gly	Met	Lys	Pro	Thr	Tyr	Leu	Asp	Pro	Asp	Thr	Asp	Ser	Gly	Arg	Gly	340	345	350



Ser Cys Asp Ser Pro Ser Leu Leu Ser Glu Lys Cys Glu Glu Pro Gln  
 355 360 365  
 Ala Asn Pro Ser Thr Phe Tyr Asp Pro Glu Val Ile Glu Lys Pro Glu  
 370 375 380  
 Asn Pro Glu Thr Thr His Thr Trp Asp Pro Gln Cys Ile Ser Met Glu  
 385 390 395 400  
 Gly Lys Ile Pro Tyr Phe His Ala Gly Gly Ser Lys Cys Ser Thr Trp  
 405 410 415  
 Pro Leu Pro Gln Pro Ser Gln His Asn Pro Arg Ser Ser Tyr His Asn  
 420 425 430  
 Ile Thr Asp Val Cys Glu Leu Ala Val Gly Pro Ala Gly Ala Pro Ala  
 435 440 445  
 Thr Leu Leu Asn Glu Ala Gly Lys Asp Ala Leu Lys Ser Ser Gln Thr  
 450 455 460  
 Ile Lys Ser Arg Glu Glu Gly Lys Ala Thr Gln Gln Arg Glu Val Glu  
 465 470 475 480  
 Ser Phe His Ser Glu Thr Asp Gln Asp Thr Pro Trp Leu Leu Pro Gln  
 485 490 495  
 Glu Lys Thr Pro Phe Gly Ser Ala Lys Pro Leu Asp Tyr Val Glu Ile  
 500 505 510  
 His Lys Val Asn Lys Asp Gly Ala Leu Ser Leu Leu Pro Lys Gln Arg  
 515 520 525  
 Glu Asn Ser Gly Lys Pro Lys Lys Pro Gly Thr Pro Glu Asn Asn Lys  
 530 535 540  
 Glu Tyr Ala Lys Val Ser Gly Val Met Asp Asn Asn Ile Leu Val Leu  
 545 550 555 560  
 Val Pro Asp Pro His Ala Lys Asn Val Ala Cys Phe Glu Glu Ser Ala  
 565 570 575  
 Lys Glu Ala Pro Pro Ser Leu Glu Gln Asn Gln Ala Glu Lys Ala Leu  
 580 585 590  
 Ala Asn Phe Thr Ala Thr Ser Ser Lys Cys Arg Leu Gln Leu Gly Gly  
 595 600 605  
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<210> 41  
 <211> 1572  
 <212> DNA  
 <213> Homo sapiens

<400> 41  
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 atcatcaaga catttggtgt cttctttaat gacttaatgg acagttttta tgaatccaat 180

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<210> 42  
 <211> 523  
 <212> PRT  
 <213> Homo sapiens

<400> 42  
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                   20                  25                  30  
  
 Phe Val Glu Val Phe Thr Tyr Gly Ile Ile Lys Thr Phe Gly Val Phe  
                   35                  40                  45  
  
 Phe Asn Asp Leu Met Asp Ser Phe Asn Glu Ser Asn Ser Arg Ile Ser  
                   50                  55                  60  
  
 Trp Ile Ile Ser Ile Cys Val Phe Val Leu Thr Phe Ser Ala Pro Leu  
   65                  70                  75                  80  
  
 Ala Thr Val Leu Ser Asn Arg Phe Gly His Arg Leu Val Val Met Leu  
                   85                  90                  95  
  
 Gly Gly Leu Leu Val Ser Thr Gly Met Val Ala Ala Ser Phe Ser Gln  
                   100                  105                  110  
  
 Glu Val Ser His Met Tyr Val Ala Ile Gly Ile Ile Ser Gly Leu Gly  
                   115                  120                  125  
  
 Tyr Cys Phe Ser Phe Leu Pro Thr Val Thr Ile Leu Ser Gln Tyr Phe  
                   130                  135                  140  
  
 Gly Lys Arg Arg Ser Ile Val Thr Ala Val Ala Ser Thr Gly Glu Cys  
   145                  150                  155                  160

Phe	Ala	Val	Phe	Ala	Phe	Ala	Pro	Ala	Ile	Met	Ala	Leu	Lys	Glu	Arg	
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Ile	Gly	Trp	Arg	Tyr	Ser	Leu	Leu	Phe	Val	Gly	Leu	Leu	Gln	Leu	Asn	
			180					185					190			
Ile	Val	Ile	Phe	Gly	Ala	Leu	Leu	Arg	Pro	Ile	Phe	Ile	Arg	Gly	Pro	
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Ala	Ser	Pro	Lys	Ile	Val	Ile	Gln	Glu	Asn	Arg	Lys	Glu	Ala	Gln	Tyr	
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Met	Leu	Glu	Asn	Glu	Lys	Thr	Arg	Thr	Ser	Ile	Asp	Ser	Ile	Asp	Ser	
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Gly	Val	Glu	Leu	Thr	Thr	Ser	Pro	Lys	Asn	Val	Pro	Thr	His	Thr	Asn	
				245					250					255		
Leu	Glu	Leu	Glu	Pro	Lys	Ala	Asp	Met	Gln	Gln	Val	Leu	Val	Lys	Thr	
			260					265					270			
Ser	Pro	Arg	Pro	Ser	Glu	Lys	Lys	Ala	Pro	Leu	Leu	Asp	Phe	Ser	Ile	
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Thr	Leu	Gly	Phe	Phe	Ala	Pro	Ser	Leu	Tyr	Ile	Ile	Pro	Leu	Gly	Ile	
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Ala	Ile	Ala	Glu	Val	Phe	Gly	Arg	Ile	Gly	Ala	Gly	Phe	Val	Leu	Asn	
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Arg	Glu	Pro	Ile	Arg	Lys	Ile	Tyr	Ile	Glu	Leu	Ile	Cys	Val	Ile	Leu	
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Leu	Met	Ser	Cys	Ser	Ile	Phe	Phe	Gly	Phe	Met	Val	Gly	Thr	Ile	Gly	
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Gly	Thr	His	Ile	Pro	Leu	Leu	Ala	Glu	Asp	Asp	Val	Val	Gly	Ile	Glu	
				405					410					415		
Lys	Met	Ser	Ser	Ala	Ala	Gly	Val	Tyr	Ile	Phe	Ile	Gln	Ser	Ile	Ala	
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Gly	Leu	Ala	Gly	Pro	Pro	Leu	Ala	Gly	Leu	Leu	Val	Asp	Gln	Ser	Lys	
		435					440					445				
Ile	Tyr	Ser	Arg	Ala	Phe	Tyr	Ser	Cys	Ala	Ala	Gly	Met	Ala	Leu	Ala	
	450					455					460					
Ala	Val	Cys	Leu	Ala	Leu	Val	Arg	Pro	Cys	Lys	Met	Gly	Leu	Cys	Gln	
465					470					475					480	

His His His Ser Gly Glu Thr Lys Val Val Ser His Arg Gly Lys Thr  
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Glu His Arg Val His Val Gln Met Glu Pro Val  
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<210> 43  
<211> 3690  
<212> DNA  
<213> Homo sapiens

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<210> 44  
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 <212> PRT  
 <213> Homo sapiens

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His Thr Ser Arg Gly Arg Gly Ser Asp Arg Glu Arg Glu Ser Arg Pro
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Glu Ala Ala Gly Leu Leu Trp Asp Arg Ala Ala Ala Gly Glu Ala Glu
          50                      55                      60

Lys Gly Asn Arg Gly Glu Pro Pro Ala Trp Ile Arg Ala Gln Gln Gln
          65                      70                      75                      80

Pro Arg Pro Pro Pro Ala Gly Gln Ala Pro Gly Thr Ala Ala Gly Gly
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Ala Gln Asp Pro Arg Leu Arg Pro Gly Arg Ser Arg Gly Arg Val Arg
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Leu Pro Val Lys Pro Pro Glu Ala Ser Gly Arg Gln Pro Arg Gly Pro
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Ser Asp Cys Ile Pro Arg Phe Pro Ser Ala Ser Ala Thr His Lys Ala
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Val Pro Lys Gly Thr Gly Pro Pro Ala Glu Asp Gly Asp Gly Leu Gly
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Ala Pro Gly Pro Arg Ala Arg Arg Arg Arg Leu Leu Gly Val Ala Ala
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Glu Gly Ser Gly Pro Arg Gly Lys Arg Arg Gly Thr Val Ser Asp Glu
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Ala	Ala	Arg	Pro	Ser	Pro	His	Pro	Gly	Thr	Pro	Leu	Arg	Ser	Cys	Ser	225	230	235	240
Cys	Cys	Trp	Leu	Arg	Cys	Trp	Arg	Arg	Gly	Arg	Gly	Pro	Ser	Gly	Glu	245	250	255	
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Gln	Cys	Pro	Glu	Arg	Phe	Asp	Gly	Gly	Asp	Ala	Thr	Ile	Cys	Cys	Gly	275	280	285	
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Arg	Ala	Asp	Lys	Asp	Gly	Pro	Arg	Arg	Leu	Gly	Arg	Ala	Ser	Cys	Leu	325	330	335	
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Arg	Ala	Phe	Pro	Gly	Leu	Leu	Pro	Arg	Ala	Arg	Arg	Arg	Gly	Phe	Pro	370	375	380	
Ser	Ser	Pro	Arg	Gly	Gly	Pro	Ser	Pro	Leu	Gln	Arg	Pro	Ala	Leu	Pro	385	390	395	400
Ile	Tyr	Val	Pro	Phe	Leu	Ile	Val	Gly	Ser	Val	Phe	Val	Ala	Phe	Ile	405	410	415	
Ile	Leu	Gly	Ser	Leu	Val	Ala	Ala	Cys	Cys	Cys	Arg	Cys	Leu	Arg	Pro	420	425	430	
Lys	Gln	Asp	Pro	Gln	Gln	Ser	Arg	Ala	Pro	Gly	Gly	Asn	Arg	Leu	Met	435	440	445	
Glu	Thr	Ile	Pro	Met	Ile	Pro	Ser	Ala	Ser	Thr	Ser	Arg	Gly	Ser	Ser	450	455	460	
Ser	Arg	Gln	Ser	Ser	Thr	Ala	Ala	Ser	Ser	Ser	Ser	Ser	Ala	Asn	Ser	465	470	475	480
Gly	Ala	Arg	Ala	Pro	Pro	Thr	Arg	Ser	Gln	Thr	Asn	Cys	Cys	Leu	Pro	485	490	495	
Glu	Gly	Thr	Met	Asn	Asn	Val	Tyr	Val	Asn	Met	Pro	Thr	Asn	Phe	Ser	500	505	510	



Val	Leu	Asn	Cys	Gln	Gln	Ala	Thr	Gln	Ile	Val	Pro	His	Gln	Gly	Gln
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Tyr	Leu	His	Pro	Pro	Tyr	Val	Gly	Tyr	Thr	Val	Gln	His	Asp	Ser	Val
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Pro	Met	Thr	Ala	Val	Pro	Pro	Phe	Met	Asp	Gly	Leu	Gln	Pro	Gly	Tyr
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Arg	Gln	Ile	Gln	Ser	Pro	Phe	Pro	His	Thr	Asn	Ser	Glu	Gln	Lys	Met
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Tyr	Pro	Ala	Val	Thr	Val										
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<210> 45  
 <211> 3857  
 <212> DNA  
 <213> Homo sapiens

<400> 45

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<210> 46

<211> 1227

<212> PRT

<213> Homo sapiens

<400> 46

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Glu Arg Arg Asn Gln Glu Thr Gln Gln Asp Asp Gly Thr Phe Asn Ser
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Ser Tyr Ser Leu Phe Ser Glu Pro Tyr Lys Thr Asn Lys Gly Asp Glu
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Leu Ser Asn Arg Ile Gln Asn Thr Leu Gly Asn Tyr Asp Glu Met Lys
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Asp Phe Leu Thr Asp Arg Thr Asn Gln Ser His Leu Val Gly Val Pro
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Lys Pro Gly Val Pro Gln Thr Pro Val Asn Lys Ile Asp Glu His Phe
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Val Ala Asp Ser Arg Ala Gln Asn Gln Pro Ser Ser Ile Cys Ser Thr
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Thr Thr Ser Thr Pro Ala Ala Val Pro Val Gln Gln Ser Lys Arg Gly
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Pro	Glu	Ser	Pro	Asp	Asn	Gly	Thr	Ser	Asn	Thr	Ser	Met	Leu	Glu	Asp	355	360	365	
Asp	Leu	Lys	Leu	Ser	Ser	Asp	Glu	Glu	Glu	Asn	Glu	Gln	Gln	Ala	Ala	370	375	380	
Gln	Arg	Thr	Ala	Leu	Arg	Ala	Leu	Ser	Asp	Ser	Ala	Val	Val	Gln	Gln	385	390	395	400
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Lys	Pro	Pro	His	Phe	Ser	Ser	Pro	Glu	Ala	Glu	Pro	Ala	Ser	Ser	Asn	450	455	460	

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Tyr	Asn	Pro	Val	Lys	Glu	Asp	Val	Gln	Asp	Cys	Gly	Lys	Val	Pro	Asp		500	505	510
Val	Cys	Gln	Pro	Ser	Leu	Arg	Glu	Lys	Glu	Ile	Lys	Ser	Thr	Cys	Lys		515	520	525
Glu	Glu	Gln	Arg	Pro	Arg	Thr	Ala	Asn	Lys	Ala	Pro	Gly	Ser	Lys	Gly		530	535	540
Val	Lys	Gln	Lys	Ser	Pro	Pro	Ala	Ala	Val	Ala	Val	Ala	Val	Ser	Ala	545	550	555	560
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Pro	Leu	Ser	Lys	Ala	Gln	Thr	Val	Ala	Ala	Ser	Ala	Ser	Ser	Gly	Asn	690	695	700	
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Pro	Ala	Pro	Gln	Pro	Leu	Asp	Asn	Ala	Gly	Leu	Phe	Ser	Tyr	Leu	Thr	
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Asp	Glu	Asn	Thr	Ile	Pro	Pro	Leu	Ser	Val	His	Asp	Ala	Ser	Asp	Lys	
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Ser	Val	Leu	Gly	Pro	Ile	Leu	Ile	Ile	Pro	Lys	Ile	Leu	Glu	Tyr	Ser	
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Leu	Phe	Leu	Ser	Glu	Cys	Val	Lys	Ser	Leu	Ser	Phe	Ser	Ser	Ser	Trp	
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Ile	Ile	Asn	Gln	Arg	Thr	Ala	Ile	Arg	Phe	Arg	Ala	Ala	Val	Ser	Ser	
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Phe	Ala	Phe	Glu	Lys	Leu	Ile	Gln	Phe	Lys	Ser	Val	Ile	His	Ile	Thr	
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Lys	Met	Tyr	Thr	Trp	Glu	Lys	Pro	Phe	Ala	Lys	Ile	Ile	Glu	Asp	Leu	
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Ala	Leu	Gly	Pro	Glu	Glu	Glu	Gly	Asn	Ser	Leu	Gly	Pro	Glu	Leu	His	
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Cys	Cys	Ser	Leu	Asn	Arg	Asp	Leu	Glu	Leu	Leu	Pro	Phe	Gly	Asp	Met	
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 995 1000 1005  
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 Arg Phe Asn Leu Asp Pro Phe Asp Arg His Thr Asp Gln Gln Ile Trp  
 1235 1240 1245  
 Asp Ala Leu Glu Arg Thr Phe Leu Thr Lys Ala Ile Ser Lys Phe Pro  
 1250 1255 1260  
 Lys Lys Leu His Thr Asp Val Val Glu Asn Gly Gly Asn Phe Ser Val  
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Gly Glu Arg Gln Leu Leu Cys Ile Ala Arg Ala Val Leu Arg Asn Ser  
 1285 1290 1295  
 Lys Ile Ile Leu Ile Asp Glu Ala Thr Ala Ser Ile Asp Met Glu Thr  
 1300 1305 1310  
 Asp Thr Leu Ile Gln Arg Thr Ile Arg Glu Ala Phe Gln Gly Cys Thr  
 1315 1320 1325  
 Val Leu Val Ile Ala His Arg Val Thr Thr Val Leu Asn Cys Asp His  
 1330 1335 1340  
 Ile Leu Val Met Gly Asn Gly Lys Val Val Glu Phe Asp Arg Pro Glu  
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<210> 49  
 <211> 2682  
 <212> DNA  
 <213> Homo sapiens

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<210> 50  
 <211> 240  
 <212> PRT  
 <213> Homo sapiens

<400> 50  
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 20 25 30  
 Gly Leu Glu Ser Gly Gln Pro Leu Tyr Leu Leu Glu Leu Asn Trp Gly  
 35 40 45  
 Gly Thr Glu Cys Ala Leu Ser Ser Thr Gly Arg Thr Ala Ala Cys Phe  
 50 55 60  
 Leu Pro Ile Ser Leu Leu Pro Thr Ser Pro Ala Ala Trp Leu Gly Pro  
 65 70 75 80  
 Glu Ala Leu Cys Leu Pro Gly Arg Pro Gly Thr Thr Gly Leu Arg Asp  
 85 90 95  
 Thr Gly Gly Pro Leu Leu Leu Pro Pro Pro Thr Leu Leu Gln Asp Thr  
 100 105 110  
 Thr Arg Trp Cys Trp Met Leu Val Leu Trp Pro Ala Lys Val His Gly  
 115 120 125  
 Asp Ser Pro His Gly Ile Leu Arg Asp Gln Ala Ala Gly Ile Gly Lys  
 130 135 140  
 Glu Phe His Pro Asp His Cys Pro Ser Gln Val Pro Arg Arg Pro His  
 145 150 155 160  
 His Thr Pro Phe Gln Gly Gln Gly Ser Ser Lys Pro Arg Ala Arg Ile  
 165 170 175  
 Leu Cys Cys Cys Leu Val Glu Ser Leu Pro Pro Cys Val Gly Ser Val  
 180 185 190  
 Gly Gln Ala Glu Cys Ile Gly Asp Arg Ala Val Ser Met Gly Leu Gly  
 195 200 205  
 Val Cys Glu Leu Arg Pro Arg Cys Ala Val Trp Arg Arg Val Leu Ser  
 210 215 220

Gly Lys Arg Cys Gly Phe Lys Val Cys Val Cys Arg Gly Trp Val Cys  
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<210> 51  
 <211> 1194  
 <212> DNA  
 <213> Homo sapiens

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<210> 52  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
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 20 25 30  
 Asp Gly Cys Thr Leu Pro Ala Gly Ile Thr Val Val Leu Ser Ile Trp  
 35 40 45  
 Gly Leu His His Asn Pro Ala Val Trp Lys Asn Pro Lys Val Phe Asp  
 50 55 60  
 Pro Leu Arg Phe Ser Gln Glu Asn Ser Asp Gln Arg His Pro Tyr Ala  
 65 70 75 80  
 Tyr Leu Pro Phe Ser Ala Gly Ser Arg Asn Cys Ile Gly Gln Glu Phe  
 85 90 95  
 Ala Met Ile Glu Leu Lys Val Thr Ile Ala Leu Ile Leu Leu His Phe  
 100 105 110

Arg Val Thr Pro Asp Pro Thr Arg Pro Leu Thr Phe Pro Asn His Phe  
115 120 125

Ile Leu Lys Pro Lys Asn Gly Met Tyr Leu His Leu Lys Lys Leu Ser  
130 135 140

Glu Cys  
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<210> 53  
<211> 1533  
<212> DNA  
<213> Homo sapiens

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<210> 54  
<211> 510  
<212> PRT  
<213> Homo sapiens

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Glu Leu Glu Thr Ser Asp Val Val Thr Val Val Leu Gly Gln Asp Ala  
35 40 45  
Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly Gln  
50 55 60

Val 65	Ala	Trp	Ala	Arg	Val 70	Asp	Ala	Gly	Glu	Gly 75	Ala	Gln	Glu	Leu	Ala 80
Leu	Leu	His	Ser	Lys 85	Tyr	Gly	Leu	His	Val 90	Ser	Pro	Ala	Tyr	Glu 95	Gly
Arg	Val	Glu	Gln	Pro	Pro	Pro	Pro	Arg	Asn 105	Pro	Leu	Asp	Gly	Ser	Val
Leu	Leu	Arg	Asn	Ala	Val	Gln	Ala	Asp	Glu	Gly	Glu	Tyr	Glu	Cys	Arg
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Val 130	Ser	Thr	Phe	Pro	Ala	Gly	Ser	Phe	Gln	Ala	Arg	Leu	Arg	Leu	Arg
						135					140				
Val 145	Leu	Val	Pro	Pro	Leu	Pro	Ser	Leu	Asn	Pro	Gly	Pro	Ala	Leu	Glu
					150					155					160
Glu	Gly	Gln	Gly	Leu	Thr	Leu	Ala	Ala	Ser	Cys	Thr	Ala	Glu	Gly	Ser
				165					170					175	
Pro	Ala	Pro	Ser	Val	Thr	Trp	Asp	Thr	Glu	Val	Lys	Gly	Thr	Thr	Ser
			180					185					190		
Ser	Arg	Ser	Phe	Lys	His	Ser	Arg	Ser	Ala	Ala	Val	Thr	Ser	Glu	Phe
		195					200					205			
His 210	Leu	Val	Pro	Ser	Arg	Ser	Met	Asn	Gly	Gln	Pro	Leu	Thr	Cys	Val
						215					220				
Val 225	Ser	His	Pro	Gly	Leu	Leu	Gln	Asp	Gln	Arg	Ile	Thr	His	Ile	Leu
					230					235					240
His	Val	Ser	Phe	Leu	Ala	Glu	Ala	Ser	Val	Arg	Gly	Leu	Glu	Asp	Gln
				245					250					255	
Asn	Leu	Trp	His	Ile	Gly	Arg	Glu	Gly	Ala	Met	Leu	Lys	Cys	Leu	Ser
			260					265					270		
Glu	Gly	Gln	Pro	Pro	Pro	Ser	Tyr	Asn	Trp	Thr	Arg	Leu	Asp	Gly	Pro
		275					280					285			
Leu	Pro	Ser	Gly	Val	Arg	Val	Asp	Gly	Asp	Thr	Leu	Gly	Phe	Pro	Pro
	290					295					300				
Leu	Thr	Thr	Glu	His	Ser	Gly	Ile	Tyr	Val	Cys	His	Val	Ser	Asn	Glu
305					310					315					320
Phe	Ser	Ser	Arg	Asp	Ser	Gln	Val	Thr	Val	Asp	Val	Leu	Asp	Pro	Gln
				325					330					335	
Glu	Asp	Ser	Gly	Lys	Gln	Val	Asp	Leu	Val	Ser	Ala	Ser	Val	Val	Val
			340					345					350		
Val	Gly	Val	Ile	Ala	Ala	Leu	Leu	Phe	Cys	Leu	Leu	Val	Val	Val	Val
	355					360						365			
Val	Leu	Met	Ser	Arg	Tyr	His	Arg	Arg	Lys	Ala	Gln	Gln	Met	Thr	Gln
370						375					380				

Lys Tyr Glu Glu Glu Leu Thr Leu Thr Arg Glu Asn Ser Ile Arg Arg  
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 405 410 415  
 Gly Leu Arg Ala Glu Gly His Pro Asp Ser Leu Lys Asp Asn Ser Ser  
 420 425 430  
 Cys Ser Val Met Ser Glu Glu Pro Glu Gly Arg Ser Tyr Ser Thr Leu  
 435 440 445  
 Thr Thr Val Arg Glu Ile Glu Thr Gln Thr Glu Leu Leu Ser Pro Gly  
 450 455 460  
 Ser Gly Arg Ala Glu Glu Glu Glu Asp Gln Asp Glu Gly Ile Lys Gln  
 465 470 475 480  
 Ala Met Asn His Phe Val Gln Glu Asn Gly Thr Leu Arg Ala Lys Pro  
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<210> 55  
 <211> 2642  
 <212> DNA  
 <213> Homo sapiens

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<210> 56
<211> 550
<212> PRT
<213> Homo sapiens

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<400> 56
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Ser Tyr Leu Lys Pro Arg Thr Lys Glu Ser Met Tyr His Ser Leu Thr
      20             25             30

Tyr Ala Thr Ile Leu Glu Met Gln Ala Met Met Thr Phe Asp Pro Gln
      35             40             45

Asp Ile Leu Leu Ala Gly Asn Met Met Lys Glu Ala Gln Met Leu Cys
      50             55             60

Gln Arg His Arg Arg Lys Ser Ser Val Thr Asp Ser Phe Ser Ser Leu
      65             70             75             80

Val Asn Arg Pro Thr Leu Gly Gln Phe Thr Glu Glu Glu Ile His Ala
      85             90             95

Glu Val Cys Tyr Ala Glu Cys Leu Leu Gln Arg Ala Ala Leu Thr Phe
      100            105            110

Leu Gln Asp Glu Asn Met Val Ser Phe Ile Lys Gly Gly Ile Lys Val
      115            120            125

Arg Asn Ser Tyr Gln Thr Tyr Lys Glu Leu Asp Ser Leu Val Gln Ser
      130            135            140

Ser Gln Tyr Cys Lys Gly Glu Asn His Pro His Phe Glu Gly Gly Val
      145            150            155            160

Lys Leu Gly Val Gly Ala Phe Asn Leu Thr Leu Ser Met Leu Pro Thr
      165            170            175

Arg Ile Leu Arg Leu Leu Glu Phe Val Gly Phe Ser Gly Asn Lys Asp
      180            185            190

Tyr Gly Leu Leu Gln Leu Glu Glu Gly Ala Ser Gly His Ser Phe Arg
      195            200            205

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Ser 210	Val	Leu	Cys	Val	Met	Leu	Leu	Leu	Cys	Tyr	His	Thr	Phe	Leu	Thr
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Phe 225	Val	Leu	Gly	Thr	Gly	Asn	Val	Asn	Ile	Glu	Glu	Ala	Glu	Lys	Leu 240
					230					235					
Leu	Lys	Pro	Tyr	Leu	Asn	Arg	Tyr	Pro	Lys	Gly	Ala	Ile	Phe	Leu	Phe
				245					250					255	
Phe	Ala	Gly	Arg	Ile	Glu	Val	Ile	Lys	Gly	Asn	Ile	Asp	Ala	Ala	Ile
			260					265					270		
Arg	Arg	Phe	Glu	Glu	Cys	Cys	Glu	Ala	Gln	Gln	His	Trp	Lys	Gln	Phe
		275					280					285			
His	His	Met	Cys	Tyr	Trp	Glu	Leu	Met	Trp	Cys	Phe	Thr	Tyr	Lys	Gly
	290					295					300				
Gln	Trp	Lys	Met	Ser	Tyr	Phe	Tyr	Ala	Asp	Leu	Leu	Ser	Lys	Glu	Asn 320
305				310						315					
Cys	Trp	Ser	Lys	Ala	Thr	Tyr	Ile	Tyr	Met	Lys	Ala	Ala	Tyr	Leu	Ser
				325					330					335	
Met	Phe	Gly	Lys	Glu	Asp	His	Lys	Pro	Phe	Gly	Asp	Asp	Glu	Val	Glu
			340					345					350		
Leu	Phe	Arg	Ala	Val	Pro	Gly	Leu	Lys	Leu	Lys	Ile	Ala	Gly	Lys	Ser
		355					360					365			
Leu	Pro	Thr	Glu	Lys	Phe	Ala	Ile	Arg	Lys	Ser	Arg	Arg	Tyr	Phe	Ser
	370					375					380				
Ser	Asn	Pro	Ile	Ser	Leu	Pro	Val	Pro	Ala	Leu	Glu	Met	Met	Tyr	Ile 400
385				390						395					
Trp	Asn	Gly	Tyr	Ala	Val	Ile	Gly	Lys	Gln	Pro	Lys	Leu	Thr	Asp	Gly
				405					410					415	
Ile	Leu	Glu	Ile	Ile	Thr	Lys	Ala	Glu	Glu	Met	Leu	Glu	Lys	Gly	Pro
			420					425					430		
Glu	Asn	Glu	Tyr	Ser	Val	Asp	Asp	Glu	Cys	Leu	Val	Lys	Leu	Leu	Lys
		435					440					445			
Gly	Leu	Cys	Leu	Lys	Tyr	Leu	Gly	Arg	Val	Gln	Glu	Ala	Glu	Glu	Asn
	450					455					460				
Phe	Arg	Ser	Ile	Ser	Ala	Asn	Glu	Lys	Lys	Ile	Lys	Tyr	Asp	His	Tyr 480
465				470						475					
Leu	Ile	Pro	Asn	Ala	Leu	Leu	Glu	Leu	Ala	Leu	Leu	Leu	Met	Glu	Gln
			485						490					495	
Asp	Arg	Asn	Glu	Glu	Ala	Ile	Lys	Leu	Leu	Glu	Ser	Ala	Lys	Gln	Asn
			500					505					510		
Tyr	Lys	Asn	Tyr	Ser	Met	Glu	Ser	Arg	Thr	His	Phe	Arg	Ile	Gln	Ala
		515					520					525			

Ala Thr Leu Gln Ala Lys Ser Ser Leu Glu Asn Ser Ser Arg Ser Met  
530 535 540

Val Ser Ser Val Ser Leu  
545 550

<210> 57  
<211> 927  
<212> DNA  
<213> Homo sapiens

<400> 57  
atgcctgggg ggtgctcccg gggccccgcc gccggggacg ggcgtctgcg gctggcgcgga 60  
ctagcgctgg tactcctggg ctgggtctcc tcgtcttctc ccacctcctc ggcattcctcc 120  
ttctcctcct cggcgccggt cctggcttcc gccgtgtccg cccagcccc cctgcccggac 180  
cagtgcctcg cgctgtgcca gtgctccgag gcagcgcgca cagtcaagtg cgttaaccgc 240  
aatctgaccg aggtgcccac ggacctgcc gcctacgtgc gcaacctctt ccttaccggc 300  
aaccagctgg ccagcaacca cttcctttac ctgccgcggg atgtgctggc ccaactgccc 360  
agcctcaggc acctggactt aagtaataat tcgctgggtga gcctgacctc cgtgtccttc 420  
cgcaacctga cacatctaga aagcctccac ctggaggaca atgccctcaa ggtccttcac 480  
aatggcaccc tggctgagtt gcaaggtcta cccacatta gggttttcct ggacaacaat 540  
ccctgggtct gcgactgcca catggcagac atgggtgacct ggctcaagga aacagaggta 600  
gtgcagggca aagaccggct cacctgtgca tatccggaaa aaatgaggaa tcgggtcctc 660  
ttggaactca acagtgtgta cctggactgt gacccgattc ttcccccatc cctgcaaacc 720  
tcttatgtct tcctgggtat tgttttagcc ctgataggcg ctattttcct cctggttttg 780  
tatttgaacc gcaaggggat aaaaaagtgg atgcataaca tcagagatgc ctgcagggat 840  
cacatggaag ggtatcatta cagatatgaa atcaatgcgg accccagatt aacaaacctc 900  
agttctaact cggatgtcct cgagtga 927

<210> 58  
<211> 308  
<212> PRT  
<213> Homo sapiens

<400> 58  
Met Pro Gly Gly Cys Ser Arg Gly Pro Ala Ala Gly Asp Gly Arg Leu  
1 5 10 15  
Arg Leu Ala Arg Leu Ala Leu Val Leu Leu Gly Trp Val Ser Ser Ser  
20 25 30  
Ser Pro Thr Ser Ser Ala Ser Ser Phe Ser Ser Ser Ala Pro Phe Leu  
35 40 45  
Ala Ser Ala Val Ser Ala Gln Pro Pro Leu Pro Asp Gln Cys Pro Ala  
50 55 60  
Leu Cys Glu Cys Ser Glu Ala Ala Arg Thr Val Lys Cys Val Asn Arg  
65 70 75 80  
Asn Leu Thr Glu Val Pro Thr Asp Leu Pro Ala Tyr Val Arg Asn Leu  
85 90 95  
Phe Leu Thr Gly Asn Gln Leu Ala Ser Asn His Phe Leu Tyr Leu Pro  
100 105 110  
Arg Asp Val Leu Ala Gln Leu Pro Ser Leu Arg His Leu Asp Leu Ser  
115 120 125

Asn Asn Ser Leu Val Ser Leu Thr Tyr Val Ser Phe Arg Asn Leu Thr  
 130 135 140  
 His Leu Glu Ser Leu His Leu Glu Asp Asn Ala Leu Lys Val Leu His  
 145 150 155 160  
 Asn Gly Thr Leu Ala Glu Leu Gln Gly Leu Pro His Ile Arg Val Phe  
 165 170 175  
 Leu Asp Asn Asn Pro Trp Val Cys Asp Cys His Met Ala Asp Met Val  
 180 185 190  
 Thr Trp Leu Lys Glu Thr Glu Val Val Gln Gly Lys Asp Arg Leu Thr  
 195 200 205  
 Cys Ala Tyr Pro Glu Lys Met Arg Asn Arg Val Leu Leu Glu Leu Asn  
 210 215 220  
 Ser Ala Asp Leu Asp Cys Asp Pro Ile Leu Pro Pro Ser Leu Gln Thr  
 225 230 235 240  
 Ser Tyr Val Phe Leu Gly Ile Val Leu Ala Leu Ile Gly Ala Ile Phe  
 245 250 255  
 Leu Leu Val Leu Tyr Leu Asn Arg Lys Gly Ile Lys Lys Trp Met His  
 260 265 270  
 Asn Ile Arg Asp Ala Cys Arg Asp His Met Glu Gly Tyr His Tyr Arg  
 275 280 285  
 Tyr Glu Ile Asn Ala Asp Pro Arg Leu Thr Asn Leu Ser Ser Asn Ser  
 290 295 300  
 Asp Val Leu Glu  
 305

<210> 59  
 <211> 1362  
 <212> DNA  
 <213> Homo sapiens

<400> 59  
 atgggggaaa atgatccgcc tgctgttgaa gcccccttct cattccgata gcttttttggc 60  
 cttgatgatt tgaaaataag tcctgttgca ccagatgcag atgctgttgc tgcacagatc 120  
 ctgtcactgc tgccattgaa gttttttcca atcatcgtca ttgggatcat tgcattgata 180  
 ttagcactgg ccattggtct gggcatccac ttcgactgct cagggaagta cagatgtcgc 240  
 tcatccttta agtgtatcga gctgatagct cgatgtgacg gagtctcgga ttgcaaagac 300  
 ggggaggacg agtaccgctg tgtccgggtg ggtggtcaga atgccgtgct ccaggtgttc 360  
 acagctgctt cgtggaagac catgtgctcc gatgactgga agggtcacta cgcaaagtgt 420  
 gcctgtgccc aactgggttt cccaagctat gtgagttcag ataacctcag agtgagctcg 480  
 ctggaggggc agttccggga ggagtttgtg tccatcgatc acctcttgcc agatgacaag 540  
 gtgactgcat tacaccactc agtatatgtg agggagggat gtgcctctgg ccacgtgggt 600  
 accttgcatg gcacagcctg tggatcataga aggggctaca gctcacgcat cgtgggtgga 660  
 aacatgtcct tgctctcgca gtggccctgg caggccagcc ttcagttcca gggctaccac 720  
 ctgtgcgggg gctctgtcat cacgcccctg tggatcatca ctgctgcaca ctgtgtttat 780  
 gacttgatcc tccccaagtc atggaccatc caggtgggtc tagtttcct gttggacaat 840  
 ccagcccatc cccacttggg ggagaagatt gtctaccaca gcaagtacaa gccaaagagg 900  
 ctgggcaatg acatcgccct tatgaagctg gccgggccac tcacgttcaa tgaaatgatc 960  
 cagcctgtgt gcctgcccac ctctgaagag aacttccccg atggaaaagt gtgctggacg 1020  
 tcaggatggg gggccacaga ggatggaggt gacgcctccc ctgtcctgaa ccacgcggcc 1080

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gtccctttga tttccaacaa gatctgcaac cacagggacg tgtacggtgg catcatctcc 1140
ccctccatgc tctgcgcggg ctacctgacg ggtggcgtgg acagctgcca gggggacagc 1200
ggggggcccc tgggtgtgtca agagaggagg ctgtggaagt tagtgggagc gaccagcttt 1260
ggcatcggct gcgcagaggt gaacaagcct ggggtgtaca cccgtgtcac ctccttcctg 1320
gactggatcc acgagcagat ggagagagac ctaaaaacct ga 1362

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<210> 60
<211> 453
<212> PRT
<213> Homo sapiens

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<400> 60
Met Gly Glu Asn Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe Arg
  1          5          10          15

Ser Leu Phe Gly Leu Asp Asp Leu Lys Ile Ser Pro Val Ala Pro Asp
      20          25          30

Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe
      35          40          45

Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala
      50          55          60

Ile Gly Leu Gly Ile His Phe Asp Cys Ser Gly Lys Tyr Arg Cys Arg
      65          70          75          80

Ser Ser Phe Lys Cys Ile Glu Leu Ile Ala Arg Cys Asp Gly Val Ser
      85          90          95

Asp Cys Lys Asp Gly Glu Asp Glu Tyr Arg Cys Val Arg Val Gly Gly
     100          105          110

Gln Asn Ala Val Leu Gln Val Phe Thr Ala Ala Ser Trp Lys Thr Met
     115          120          125

Cys Ser Asp Asp Trp Lys Gly His Tyr Ala Asn Val Ala Cys Ala Gln
     130          135          140

Leu Gly Phe Pro Ser Tyr Val Ser Ser Asp Asn Leu Arg Val Ser Ser
     145          150          155          160

Leu Glu Gly Gln Phe Arg Glu Glu Phe Val Ser Ile Asp His Leu Leu
     165          170          175

Pro Asp Asp Lys Val Thr Ala Leu His His Ser Val Tyr Val Arg Glu
     180          185          190

Gly Cys Ala Ser Gly His Val Val Thr Leu Gln Cys Thr Ala Cys Gly
     195          200          205

His Arg Arg Gly Tyr Ser Ser Arg Ile Val Gly Gly Asn Met Ser Leu
     210          215          220

Leu Ser Gln Trp Pro Trp Gln Ala Ser Leu Gln Phe Gln Gly Tyr His
     225          230          235          240

Leu Cys Gly Gly Ser Val Ile Thr Pro Leu Trp Ile Ile Thr Ala Ala
     245          250          255

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His Cys Val Tyr Asp Leu Tyr Leu Pro Lys Ser Trp Thr Ile Gln Val  
 260 265 270  
 Gly Leu Val Ser Leu Leu Asp Asn Pro Ala Pro Ser His Leu Val Glu  
 275 280 285  
 Lys Ile Val Tyr His Ser Lys Tyr Lys Pro Lys Arg Leu Gly Asn Asp  
 290 295 300  
 Ile Ala Leu Met Lys Leu Ala Gly Pro Leu Thr Phe Asn Glu Met Ile  
 305 310 315 320  
 Gln Pro Val Cys Leu Pro Asn Ser Glu Glu Asn Phe Pro Asp Gly Lys  
 325 330 335  
 Val Cys Trp Thr Ser Gly Trp Gly Ala Thr Glu Asp Gly Gly Asp Ala  
 340 345 350  
 Ser Pro Val Leu Asn His Ala Ala Val Pro Leu Ile Ser Asn Lys Ile  
 355 360 365  
 Cys Asn His Arg Asp Val Tyr Gly Gly Ile Ile Ser Pro Ser Met Leu  
 370 375 380  
 Cys Ala Gly Tyr Leu Thr Gly Gly Val Asp Ser Cys Gln Gly Asp Ser  
 385 390 395 400  
 Gly Gly Pro Leu Val Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly  
 405 410 415  
 Ala Thr Ser Phe Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val  
 420 425 430  
 Tyr Thr Arg Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu  
 435 440 445  
 Arg Asp Leu Lys Thr  
 450

<210> 61  
 <211> 3229  
 <212> DNA  
 <213> Homo sapiens

<400> 61  
 aacagaactg caacggagag actcaagatg attccctttt tacccatggt ttctctacta 60  
 ttgctgctta ttgttaaccc tataaacgcc aacaatcatt atgacaagat cttggctcat 120  
 agtcgtatca ggggtcggga ccaaggccca aatgtctgtg cccttcaaca gattttgggc 180  
 accaaaaaga aatacttcag cacttgtaag aactggtata aaaagtccat ctgtggacag 240  
 aaaacgactg ttttatatga atgttgccct gggttatatga gaatggaagg aatgaaaggc 300  
 tgcccagcag ttttgcccat tgaccatggt tatggcactc tgggcatcgt gggagccacc 360  
 acaacgcagc gctatttctga cgcctcaaaa ctgagggagg agatcgaggg aaagggatcc 420  
 ttcacttact ttgcaccgag taatgaggct tgggacaact tggattctga tatccgtaga 480  
 ggtttggaga gcaacgtgaa tggtgaatta ctgaatgctt tacatagtca catgattaat 540  
 aagagaatgt tgaccaagga cttaaaaaat ggcattgatta ttccttcaat gtataacaat 600  
 ttgggggctt tcattaacca ttatccta atgggttgatc ctgttaattg tgctcgaatc 660  
 atccatggga accagattgc aacaaatggg gttgtccatg tcattgaccg tgtgcttaca 720  
 caaattggta cctcaattca agacttcatt gaagcagaag atgaccttc atcttttaga 780  
 gcagctgcca tcacatcgga catattggag gcccttgga gagacggtca cttcacactc 840  
 tttgctccca ccaatgaggc ttttgagaaa cttccacgag gtgtcctaga aaggttcatg 900

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ggagacaaag tggcttccga agctcttatg aagtaccaca tcttaaatac tctccagtgt 960
tctgagtcta ttatgggagg agcagtcttt gagacgctgg aaggaaatac aattgagata 1020
ggatgtgacg gtgacagtat aacagtaaat ggaatcaaaa tgggtgaacaa aaaggatatt 1080
gtgacaaata atggtgtgat ccatttgatt gatcagggtcc taattcctga ttctgccaaa 1140
caagttattg agctggctgg aaaacagcaa accaccttca cggatcttgt ggcccaatta 1200
ggcttggcat ctgctctgag gccagatgga gaatacactt tgctggcacc tgtgaataat 1260
gcattttctg atgatactct cagcatgggt cagcgctcc ttaaattaat tctgcagaat 1320
cacatattga aagtaaaagt tggccttaat gagctttaca acgggcaaact actggaaacc 1380
atcggaggca aacagctcag agtcttcgta tatcgtacag ctgtctgcat tgaaaattca 1440
tgcattggaga aaggaggata gcaagggaga aacgggtgca ttcacatatt ccgcgagatc 1500
atcaagccag cagagaaatc cctccatgaa aagttaaaac aagataagcg ctttagcacc 1560
ttcctcagcc tacttgaagc tgcagacttg aaagagctcc tgacacaacc tggagactgg 1620
acattatttg tgccaaccaa tgatgctttt aagggaatga ctagtgaaga aaaagaaatt 1680
ctgatacggg acaaaaatgc tcttcaaaac atcattcttt atcacctgac accaggagtt 1740
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aaaatctttc tgaaagaagt aaatgataca cttctgggtga atgaattgaa atcaaaaaga 1860
tctgacatca tgacaacaaa tgggtgaatt catgtttag ataaactcct ctatccagca 1920
gacacacctg ttggaaatga tcaactgctg gaaatactta ataaattaat caatacatc 1980
caaattaagt ttgttcgtgg tagcaccttc aaagaaatcc ccgtgactgt ctatacaact 2040
aaaattataa ccaaagttgt ggaacaaaaa attaaagtga ttgaaggcag tcttcagcct 2100
attatcaaaa ctgaaggacc cacactaaca aaagtcaaaa ttgaagggtga acctgaattc 2160
agactgatta aagaagggtga aacaataact gaagtgatcc atggagagcc aattattaaa 2220
aaatacacca aaatcattga tggagtgcct gtggaaataa ctgaaaaaga gacacgagaa 2280
gaacgaatca ttacagggtcc tgaaataaaa tacactagga tttctactgg aggtggagaa 2340
acagaagaaa ctctgaagaa attgttataa gaagagggtca ccaagggtcac caaattcatt 2400
gaagggtggtg atgggtcattt atttgaagat gaagaaatta aaagactgct tcaggggagac 2460
acacccgtga ggaagttgca agccaacaaa aaagttcaag gttctagaag acgattaagg 2520
gaagggtcgtt ctgagtgaaa atccaaaaac cagaaaaaaa tgtttataca accctaagtc 2580
aataacctga ccttagaaaa ttgtgagagc caagttgact tcaggaactg aaacatcagc 2640
acaaagaagc aatcatcaaa taattctgaa cacaatttta atattttttt ttctgaatga 2700
gaaacatgag ggaaatttgt gagttagcct cctgtggtta aggaattgaa gaaaatataa 2760
caccttacac cttttttcat cttgacatta aaagttctgg ctaacttttg aatccattag 2820
agaaaaatcc ttgtcaccag attcattaca attcaaatcg aagagttgtg aactgttatc 2880
ccattgaaaa gaccgagcct tgtatgtatg ttatggatac ataaaatgca cgcaagccat 2940
tatctctcca tgggaagcta agttataaaa ataggtgctt ggtgtacaaa actttttata 3000
tcaaaaggct ttgcacattt ctatatgagt gggtttactg gttaaattatg ttatttttta 3060
caactaattt tgtactctca gaatgtttgt catatgcttc ttgcaatgca tattttttta 3120
tctcaaacgt ttcaataaaa ccatttttca gatataaaga gaattacttc aaattgagta 3180
attcagaaaa actcaagatt taagttaaaa agtgggtttg acttgggaa 3229

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<210> 62

<211> 836

<212> PRT

<213> Homo sapiens

<400> 62

Met Ile Pro Phe Leu Pro Met Phe Ser Leu Leu Leu Leu Leu Ile Val  
1 5 10 15

Asn Pro Ile Asn Ala Asn Asn His Tyr Asp Lys Ile Leu Ala His Ser  
20 25 30

Arg Ile Arg Gly Arg Asp Gln Gly Pro Asn Val Cys Ala Leu Gln Gln  
35 40 45

Ile Leu Gly Thr Lys Lys Lys Tyr Phe Ser Thr Cys Lys Asn Trp Tyr  
50 55 60

Lys Lys Ser Ile Cys Gly Gln Lys Thr Thr Val Leu Tyr Glu Cys Cys  
65 70 75 80



Pro Gly Tyr Met Arg Met Glu Gly Met Lys Gly Cys Pro Ala Val Leu  
                                     85                                    90                                    95

Pro Ile Asp His Val Tyr Gly Thr Leu Gly Ile Val Gly Ala Thr Thr  
                                     100                                    105                                    110

Thr Gln Arg Tyr Ser Asp Ala Ser Lys Leu Arg Glu Glu Ile Glu Gly  
                                     115                                    120                                    125

Lys Gly Ser Phe Thr Tyr Phe Ala Pro Ser Asn Glu Ala Trp Asp Asn  
                                     130                                    135                                    140

Leu Asp Ser Asp Ile Arg Arg Gly Leu Glu Ser Asn Val Asn Val Glu  
 145                                    150                                    155                                    160

Leu Leu Asn Ala Leu His Ser His Met Ile Asn Lys Arg Met Leu Thr  
                                     165                                    170                                    175

Lys Asp Leu Lys Asn Gly Met Ile Ile Pro Ser Met Tyr Asn Asn Leu  
                                     180                                    185                                    190

Gly Leu Phe Ile Asn His Tyr Pro Asn Gly Val Val Thr Val Asn Cys  
                                     195                                    200                                    205

Ala Arg Ile Ile His Gly Asn Gln Ile Ala Thr Asn Gly Val Val His  
                                     210                                    215                                    220

Val Ile Asp Arg Val Leu Thr Gln Ile Gly Thr Ser Ile Gln Asp Phe  
 225                                    230                                    235                                    240

Ile Glu Ala Glu Asp Asp Leu Ser Ser Phe Arg Ala Ala Ala Ile Thr  
                                     245                                    250                                    255

Ser Asp Ile Leu Glu Ala Leu Gly Arg Asp Gly His Phe Thr Leu Phe  
                                     260                                    265                                    270

Ala Pro Thr Asn Glu Ala Phe Glu Lys Leu Pro Arg Gly Val Leu Glu  
                                     275                                    280                                    285

Arg Phe Met Gly Asp Lys Val Ala Ser Glu Ala Leu Met Lys Tyr His  
                                     290                                    295                                    300

Ile Leu Asn Thr Leu Gln Cys Ser Glu Ser Ile Met Gly Gly Ala Val  
 305                                    310                                    315                                    320

Phe Glu Thr Leu Glu Gly Asn Thr Ile Glu Ile Gly Cys Asp Gly Asp  
                                     325                                    330                                    335

Ser Ile Thr Val Asn Gly Ile Lys Met Val Asn Lys Lys Asp Ile Val  
                                     340                                    345                                    350

Thr Asn Asn Gly Val Ile His Leu Ile Asp Gln Val Leu Ile Pro Asp  
                                     355                                    360                                    365

Ser Ala Lys Gln Val Ile Glu Leu Ala Gly Lys Gln Gln Thr Thr Phe  
                                     370                                    375                                    380

Thr Asp Leu Val Ala Gln Leu Gly Leu Ala Ser Ala Leu Arg Pro Asp  
 385                                    390                                    395                                    400

Gly Glu Tyr Thr Leu Leu Ala Pro Val Asn Asn Ala Phe Ser Asp Asp  
 405 410 415  
 Thr Leu Ser Met Val Gln Arg Leu Leu Lys Leu Ile Leu Gln Asn His  
 420 425 430  
 Ile Leu Lys Val Lys Val Gly Leu Asn Glu Leu Tyr Asn Gly Gln Ile  
 435 440 445  
 Leu Glu Thr Ile Gly Gly Lys Gln Leu Arg Val Phe Val Tyr Arg Thr  
 450 455 460  
 Ala Val Cys Ile Glu Asn Ser Cys Met Glu Lys Gly Ser Lys Gln Gly  
 465 470 475 480  
 Arg Asn Gly Ala Ile His Ile Phe Arg Glu Ile Ile Lys Pro Ala Glu  
 485 490 495  
 Lys Ser Leu His Glu Lys Leu Lys Gln Asp Lys Arg Phe Ser Thr Phe  
 500 505 510  
 Leu Ser Leu Leu Glu Ala Ala Asp Leu Lys Glu Leu Leu Thr Gln Pro  
 515 520 525  
 Gly Asp Trp Thr Leu Phe Val Pro Thr Asn Asp Ala Phe Lys Gly Met  
 530 535 540  
 Thr Ser Glu Glu Lys Glu Ile Leu Ile Arg Asp Lys Asn Ala Leu Gln  
 545 550 555 560  
 Asn Ile Ile Leu Tyr His Leu Thr Pro Gly Val Phe Ile Gly Lys Gly  
 565 570 575  
 Phe Glu Pro Gly Val Thr Asn Ile Leu Lys Thr Thr Gln Gly Ser Lys  
 580 585 590  
 Ile Phe Leu Lys Glu Val Asn Asp Thr Leu Leu Val Asn Glu Leu Lys  
 595 600 605  
 Ser Lys Glu Ser Asp Ile Met Thr Thr Asn Gly Val Ile His Val Val  
 610 615 620  
 Asp Lys Leu Leu Tyr Pro Ala Asp Thr Pro Val Gly Asn Asp Gln Leu  
 625 630 635 640  
 Leu Glu Ile Leu Asn Lys Leu Ile Lys Tyr Ile Gln Ile Lys Phe Val  
 645 650 655  
 Arg Gly Ser Thr Phe Lys Glu Ile Pro Val Thr Val Tyr Thr Thr Lys  
 660 665 670  
 Ile Ile Thr Lys Val Val Glu Pro Lys Ile Lys Val Ile Glu Gly Ser  
 675 680 685  
 Leu Gln Pro Ile Ile Lys Thr Glu Gly Pro Thr Leu Thr Lys Val Lys  
 690 695 700  
 Ile Glu Gly Glu Pro Glu Phe Arg Leu Ile Lys Glu Gly Glu Thr Ile  
 705 710 715 720

Thr Glu Val Ile His Gly Glu Pro Ile Ile Lys Lys Tyr Thr Lys Ile  
 725 730 735  
 Ile Asp Gly Val Pro Val Glu Ile Thr Glu Lys Glu Thr Arg Glu Glu  
 740 745 750  
 Arg Ile Ile Thr Gly Pro Glu Ile Lys Tyr Thr Arg Ile Ser Thr Gly  
 755 760 765  
 Gly Gly Glu Thr Glu Glu Thr Leu Lys Lys Leu Leu Gln Glu Glu Val  
 770 775 780  
 Thr Lys Val Thr Lys Phe Ile Glu Gly Gly Asp Gly His Leu Phe Glu  
 785 790 795 800  
 Asp Glu Glu Ile Lys Arg Leu Leu Gln Gly Asp Thr Pro Val Arg Lys  
 805 810 815  
 Leu Gln Ala Asn Lys Lys Val Gln Gly Ser Arg Arg Arg Leu Arg Glu  
 820 825 830  
 Gly Arg Ser Gln  
 835

<210> 63  
 <211> 3737  
 <212> DNA  
 <213> Homo sapiens

<400> 63  
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 ccgcaaccgc tgagccatcc atggggggtcg cgggccgcaa ccgtcccggg gcggcctggg 120  
 cgggtgctgct gctgctgctg ctgctgccgc cactgctgct gctggcgggg gccgtcccgc 180  
 cgggtcgggg ccgtgccgcg gggccgcagg aggatgtaga tgagtgtgcc caagggctag 240  
 atgactgcca tgccgacgcc ctgtgtcaga acacaccac ctctacaag tgctcctgca 300  
 agcctggcta ccaaggggaa ggcaggcagt gtgaggacat cgatgaatgt ggaaatgagc 360  
 tcaatggagg ctgtgtccat gactgtttga atattccagg caattatcgt tgcacttggt 420  
 ttgatggctt catgttggtt catgacgggtc ataattgtct tgatgtggac gagtgcctgg 480  
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 Gly Cys Val His Asp Cys Leu Asn Ile Pro Gly Asn Tyr Arg Cys Thr  
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 1125 1130 1135  
 Asn Pro His Tyr Leu Ser His Val Pro Gly Leu Pro Asn Pro Cys Gln  
 1140 1145 1150  
 Asn Tyr Val Pro Tyr Pro Thr Phe Asn Leu Pro Pro His Phe Ser Ala  
 1155 1160 1165  
 Val Gly Ser Asp Asn Asp Ile Pro Leu Asp Leu Ala Ile Lys His Ser  
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 Arg Pro Gly Pro Thr Ala Asn Gly Ala Ser Lys Glu Lys Thr Lys Ala  
 1185 1190 1195 1200  
 Pro Pro Asn Val Lys Asn Glu Gly Pro Leu Asn Val Val Lys Thr Glu  
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 Lys Val Asp Arg Ser Thr Gln Asp Glu Leu Ser Thr Lys Cys Val His  
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 Cys Gly Ile Val Phe Leu Asp Glu Val Met Tyr Ala Leu His Met Ser  
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 Cys His Gly Asp Ser Gly Pro Phe Gln Cys Ser Ile Cys Gln His Leu  
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<210> 69  
 <211> 387  
 <212> DNA  
 <213> Homo sapiens

<400> 69  
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387

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<212> PRT  
<213> Homo sapiens

<400> 70  
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Thr Met Glu Thr Asn Gln Ser Leu Ala Gln Gly Thr Gly Cys Ser Val  
35 40 45  
Val Lys Val Asp Thr Val Leu Phe Glu Ser Leu Tyr His Cys Gly Phe  
50 55 60  
Glu His Gly Ser Val Met His Cys Leu Gly Asp Asp His Pro Gln Glu  
65 70 75 80  
Asp Arg Lys Ala His Phe Ser Ala Pro Val Ala Ala Ile Ala Ser Pro  
85 90 95  
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<210> 71  
<211> 5393  
<212> DNA  
<213> Homo sapiens

<400> 71  
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taaacttatt	ttcataattg	tttaataact	tttgtataat	cttcattgct	attatgagag	4680
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<210> 72

<211> 386

<212> PRT

<213> Homo sapiens

<400> 72

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Ile Arg Glu Asp Tyr Pro Gln Lys Glu Ile Leu Arg Ala Leu Lys Ala
      20                      25                      30

```

```

Lys Cys Cys Glu Glu Glu Leu Asp Phe Arg Ala Val Val Met Asp Glu
      35                      40                      45

```

```

Val Val Leu Thr Ile Glu Gln Gly Asn Leu Gly Leu Arg Ile Asn Gly
      50                      55                      60

```

```

Glu Leu Ile Thr Ala Tyr Pro Gln Val Val Val Val Arg Val Pro Thr
      65                      70                      75                      80

```

```

Pro Trp Val Gln Ser Asp Ser Asp Ile Thr Val Leu Arg His Leu Glu
      85                      90                      95

```

```

Lys Met Gly Cys Arg Leu Met Asn Arg Pro Gln Ala Ile Leu Asn Cys
      100                      105                      110

```

```

Val Asn Lys Phe Trp Thr Phe Gln Glu Leu Ala Gly His Gly Val Pro
      115                      120                      125

```

```

Leu Pro Asp Thr Phe Ser Tyr Gly Gly His Glu Asn Phe Ala Lys Met
      130                      135                      140

```

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Ile Asp Glu Ala Glu Val Leu Glu Phe Pro Met Val Val Lys Asn Thr
      145                      150                      155                      160

```

```

Arg Gly His Arg Gly Lys Ala Val Phe Leu Ala Arg Asp Lys His His
      165                      170                      175

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```

Leu Ala Asp Leu Ser His Leu Ile Arg His Glu Ala Pro Tyr Leu Phe
      180                      185                      190

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```

Gln Lys Tyr Val Lys Glu Ser His Gly Arg Asp Val Arg Val Ile Val
      195                      200                      205

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Val Gly Gly Arg Val Val Gly Thr Met Leu Arg Cys Ser Thr Asp Gly
      210                      215                      220

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Arg Met Gln Ser Asn Cys Ser Leu Gly Gly Val Gly Met Met Cys Ser  
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 Leu Ser Glu Gln Gly Lys Gln Leu Ala Ile Gln Val Ser Asn Ile Leu  
 245 250 255  
 Gly Met Asp Val Cys Gly Ile Asp Leu Leu Met Lys Asp Asp Gly Ser  
 260 265 270  
 Phe Cys Val Cys Glu Ala Asn Ala Asn Val Gly Phe Ile Ala Phe Asp  
 275 280 285  
 Lys Ala Cys Asn Leu Asp Val Ala Gly Ile Ile Ala Asp Tyr Ala Ala  
 290 295 300  
 Ser Leu Leu Pro Ser Gly Arg Leu Thr Arg Arg Met Ser Leu Leu Ser  
 305 310 315 320  
 Val Val Ser Thr Ala Ser Glu Thr Ser Glu Pro Glu Leu Gly Pro Pro  
 325 330 335  
 Ala Ser Thr Ala Val Asp Asn Met Ser Ala Ser Ser Ser Ser Val Asp  
 340 345 350  
 Ser Asp Pro Glu Ser Thr Glu Arg Glu Leu Leu Thr Lys Leu Pro Gly  
 355 360 365  
 Gly Leu Phe Asn Met Asn Gln Leu Leu Ala Asn Glu Ile Lys Leu Leu  
 370 375 380  
 Val Asp  
 385

<210> 73  
 <211> 1431  
 <212> DNA  
 <213> Homo sapiens

<400> 73  
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<210> 74  
<211> 314  
<212> PRT  
<213> Homo sapiens

<400> 74  
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Val Pro Trp Gly His Ile Ala Ala Lys Ala Trp Gly Ser Leu Gln Gly  
20 25 30  
Pro Pro Val Leu Cys Leu His Gly Trp Leu Asp Asn Ala Ser Ser Phe  
35 40 45  
Asp Arg Leu Ile Pro Leu Leu Pro Gln Asp Phe Tyr Tyr Val Ala Met  
50 55 60  
Asp Phe Gly Gly His Gly Leu Ser Ser His Tyr Ser Pro Gly Val Pro  
65 70 75 80  
Tyr Tyr Leu Gln Thr Phe Val Ser Glu Ile Arg Arg Val Val Ala Ala  
85 90 95  
Leu Lys Trp Asn Arg Phe Ser Ile Leu Gly His Ser Phe Gly Gly Val  
100 105 110  
Val Gly Gly Met Phe Phe Cys Thr Phe Pro Glu Met Val Asp Lys Leu  
115 120 125  
Ile Leu Leu Asp Thr Pro Leu Phe Leu Leu Glu Ser Asp Glu Met Glu  
130 135 140  
Asn Leu Leu Thr Tyr Lys Arg Arg Ala Ile Glu His Val Leu Gln Val  
145 150 155 160  
Glu Ala Ser Gln Glu Pro Ser His Val Phe Ser Leu Lys Gln Leu Leu  
165 170 175  
Gln Arg Leu Leu Lys Ser Asn Ser His Leu Ser Glu Glu Cys Gly Glu  
180 185 190  
Leu Leu Leu Gln Arg Gly Thr Thr Lys Val Ala Thr Gly Leu Val Leu  
195 200 205  
Asn Arg Asp Gln Arg Leu Ala Trp Ala Glu Asn Ser Ile Asp Phe Ile  
210 215 220  
Ser Arg Glu Leu Cys Ala His Ser Ile Arg Lys Leu Gln Ala His Val  
225 230 235 240  
Leu Leu Ile Lys Ala Val His Gly Tyr Phe Asp Ser Arg Gln Asn Tyr  
245 250 255  
Ser Glu Lys Glu Ser Leu Ser Phe Met Ile Asp Thr Met Lys Ser Thr  
260 265 270

Leu Lys Glu Gln Phe Gln Phe Val Glu Val Pro Gly Asn His Cys Val  
 275 280 285

His Met Ser Glu Pro Gln His Val Ala Ser Ile Ile Ser Ser Phe Leu  
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Gln Cys Thr His Met Leu Pro Ala Gln Leu  
 305 310

<210> 75  
 <211> 1442  
 <212> DNA  
 <213> Homo sapiens

<400> 75  
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 cc 1442

<210> 76  
 <211> 280  
 <212> PRT  
 <213> Homo sapiens

<400> 76  
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 20 25 30  
 Val Leu Ala Asn Arg Val Ala Val Val Thr Gly Ser Thr Ser Gly Ile  
 35 40 45  
 Gly Phe Ala Ile Ala Arg Arg Leu Ala Arg Asp Gly Ala His Val Val  
 50 55 60



Ile	Ser	Ser	Arg	Lys	Gln	Gln	Asn	Val	Asp	Arg	Ala	Met	Ala	Lys	Leu	65	70	75	80
Gln	Gly	Glu	Gly	Leu	Ser	Val	Ala	Gly	Ile	Val	Cys	His	Val	Gly	Lys	85	90	95	
Ala	Glu	Asp	Arg	Glu	Gln	Leu	Val	Ala	Lys	Ala	Leu	Glu	His	Cys	Gly	100	105	110	
Gly	Val	Asp	Phe	Leu	Val	Cys	Ser	Ala	Gly	Val	Asn	Pro	Leu	Val	Gly	115	120	125	
Ser	Thr	Leu	Gly	Thr	Ser	Glu	Gln	Ile	Trp	Asp	Lys	Ile	Leu	Ser	Val	130	135	140	
Asn	Val	Lys	Ser	Pro	Ala	Leu	Leu	Leu	Ser	Gln	Leu	Leu	Pro	Tyr	Met	145	150	155	160
Glu	Asn	Arg	Arg	Gly	Ala	Val	Ile	Leu	Val	Ser	Ser	Ile	Ala	Ala	Tyr	165	170	175	
Asn	Pro	Val	Val	Ala	Leu	Gly	Val	Tyr	Asn	Val	Ser	Lys	Thr	Ala	Leu	180	185	190	
Leu	Gly	Leu	Thr	Arg	Thr	Leu	Ala	Leu	Glu	Leu	Ala	Pro	Lys	Asp	Ile	195	200	205	
Arg	Val	Asn	Cys	Val	Val	Pro	Gly	Ile	Ile	Lys	Thr	Asp	Phe	Ser	Lys	210	215	220	
Val	Phe	His	Gly	Asn	Glu	Ser	Leu	Trp	Lys	Asn	Phe	Lys	Glu	His	His	225	230	235	240
Gln	Leu	Gln	Arg	Ile	Gly	Glu	Ser	Glu	Asp	Cys	Ala	Gly	Ile	Val	Ser	245	250	255	
Phe	Leu	Cys	Ser	Pro	Asp	Ala	Ser	Tyr	Val	Asn	Gly	Glu	Asn	Ile	Ala	260	265	270	
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 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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Ala Gln Gln Tyr Leu Glu Lys Tyr Tyr Asn Leu Glu Lys Asp Val Lys
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Gln Phe Arg Arg Lys Asp Ser Asn Leu Ile Val Lys Lys Ile Gln Gly
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Met Gln Lys Phe Leu Gly Leu Glu Val Thr Gly Lys Leu Asp Thr Asp
      65                      70                      75                      80

Thr Leu Glu Val Met Arg Lys Pro Arg Cys Gly Val Pro Asp Val Gly
      85                      90                      95

His Phe Ser Ser Phe Pro Gly Met Pro Lys Trp Arg Lys Thr His Leu
      100                      105                      110

Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Arg Asp Ala Val
      115                      120                      125

Asp Ser Ala Ile Glu Lys Ala Leu Lys Val Trp Glu Glu Val Thr Pro
      130                      135                      140

Leu Thr Phe Ser Arg Leu Tyr Glu Gly Glu Ala Asp Ile Met Ile Ser
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Phe Ala Val Lys Glu His Gly Asp Phe Tyr Ser Phe Asp Gly Pro Gly
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His Ser Leu Ala His Ala Tyr Pro Pro Gly Pro Gly Leu Tyr Gly Asp
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<400> 79

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<211> 680

<212> PRT

<213> Homo sapiens

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Gly Pro Leu Pro Asn Thr Lys Thr Gln Phe Phe Ile Pro Tyr Thr Ile  
35 40 45  
Lys Ser Lys Gly Ile Ala Val Arg Gly Glu Gln Gly Thr Pro Gly Pro  
50 55 60  
Pro Gly Pro Ala Gly Pro Arg Gly His Pro Gly Pro Ser Gly Pro Pro  
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Gly Lys Pro Gly Tyr Gly Ser Pro Gly Leu Gln Gly Glu Pro Gly Leu  
85 90 95  
Pro Gly Pro Pro Gly Pro Ser Ala Val Gly Lys Pro Gly Val Pro Gly  
100 105 110  
Leu Pro Gly Lys Pro Gly Glu Arg Gly Pro Tyr Gly Pro Lys Gly Asp  
115 120 125  
Val Gly Pro Ala Gly Leu Pro Gly Pro Arg Gly Pro Pro Gly Pro Pro  
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Gly Ile Pro Gly Pro Ala Gly Ile Ser Val Pro Gly Lys Pro Gly Gln  
145 150 155 160  
Gln Gly Pro Thr Gly Ala Pro Gly Pro Arg Gly Phe Pro Gly Glu Lys  
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Gly Ala Pro Gly Val Pro Gly Met Asn Gly Gln Lys Gly Glu Met Gly  
180 185 190  
Tyr Gly Ala Pro Gly Arg Pro Gly Glu Arg Gly Leu Pro Gly Pro Gln  
195 200 205  
Gly Pro Thr Gly Pro Ser Gly Pro Pro Gly Val Gly Lys Arg Gly Glu  
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Asn Gly Val Pro Gly Gln Pro Gly Ile Lys Gly Asp Arg Gly Phe Pro  
225 230 235 240  
Gly Glu Met Gly Pro Ile Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly  
245 250 255  
Glu Arg Gly Pro Glu Gly Ile Gly Lys Pro Gly Ala Ala Gly Ala Pro  
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275 280 285  
Ile Ala Gly Pro Pro Gly Pro Pro Gly Phe Gly Lys Pro Gly Leu Pro  
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Gly Leu Lys Gly Glu Arg Gly Pro Ala Gly Leu Pro Gly Gly Pro Gly  
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Thr	Gly	Pro	Pro	Gly	Asn	Met	Gly	Pro	Gln	Gly	Pro	Lys	Gly	Ile	Pro	340	345	350	
Gly	Ser	His	Gly	Leu	Pro	Gly	Pro	Lys	Gly	Glu	Thr	Gly	Pro	Ala	Gly	355	360	365	
Pro	Ala	Gly	Tyr	Pro	Gly	Ala	Lys	Gly	Glu	Arg	Gly	Ser	Pro	Gly	Ser	370	375	380	
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Gly	Asn	Pro	Gly	Leu	Pro	Gly	Pro	Lys	Gly	Asp	Pro	Gly	Val	Gly	Gly	405	410	415	
Pro	Pro	Gly	Leu	Pro	Gly	Pro	Val	Gly	Pro	Ala	Gly	Ala	Lys	Gly	Met	420	425	430	
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Gly	Val	Thr	Gly	Met	Pro	Val	Ser	Ala	Phe	Thr	Val	Ile	Leu	Ser	Lys	545	550	555	560
Ala	Tyr	Pro	Ala	Ile	Gly	Thr	Pro	Ile	Pro	Phe	Asp	Lys	Ile	Leu	Tyr	565	570	575	
Asn	Arg	Gln	Gln	His	Tyr	Asp	Pro	Arg	Thr	Gly	Ile	Phe	Thr	Cys	Gln	580	585	590	
Ile	Pro	Gly	Ile	Tyr	Tyr	Phe	Ser	Tyr	His	Val	His	Val	Lys	Gly	Thr	595	600	605	
His	Val	Trp	Val	Gly	Leu	Tyr	Lys	Asn	Gly	Thr	Pro	Val	Met	Tyr	Thr	610	615	620	
Tyr	Asp	Glu	Tyr	Thr	Lys	Gly	Tyr	Leu	Asp	Gln	Ala	Ser	Gly	Ser	Ala	625	630	635	640

Ile Ile Asp Leu Thr Glu Asn Asp Gln Val Trp Leu Gln Leu Pro Asn  
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Ser Gly Phe Leu Val Ala Pro Met  
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<212> DNA  
<213> Homo sapiens

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<210> 82  
 <211> 509  
 <212> PRT  
 <213> Homo sapiens

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      35              40              45

Leu Ile Arg Leu Ala Ala Gly His Leu Val Gln Leu Pro Ala Gly Val
      50              55              60

Lys Ser Pro Pro Tyr Ile Phe Ser Pro Ile Pro Phe Leu Gly His Ala
      65              70              75              80

Ile Ala Phe Gly Lys Ser Pro Ile Glu Phe Leu Glu Asn Ala Tyr Glu
      85              90              95

Lys Tyr Gly Pro Val Phe Ser Phe Thr Met Val Gly Lys Thr Phe Thr
      100             105             110

Tyr Leu Leu Gly Ser Asp Ala Ala Ala Leu Leu Phe Asn Ser Lys Asn
      115             120             125

Glu Asp Leu Asn Ala Glu Asp Val Tyr Ser Arg Leu Thr Thr Pro Val
      130             135             140

Phe Gly Lys Gly Val Ala Tyr Asp Val Pro Asn Pro Val Phe Leu Glu
      145             150             155             160

Gln Lys Lys Met Leu Lys Ser Gly Leu Asn Ile Ala His Phe Lys Gln
      165             170             175

His Val Ser Ile Ile Glu Lys Glu Thr Lys Glu Tyr Phe Glu Ser Trp
      180             185             190

Gly Glu Ser Gly Glu Lys Asn Val Phe Glu Ala Leu Ser Glu Leu Ile
      195             200             205

Ile Leu Thr Ala Ser His Cys Leu His Gly Lys Glu Ile Arg Ser Gln
      210             215             220

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Leu	Asn	Glu	Lys	Val	Ala	Gln	Leu	Tyr	Ala	Asp	Leu	Asp	Gly	Gly	Phe	
225					230					235					240	
Ser	His	Ala	Ala	Trp	Leu	Leu	Pro	Gly	Trp	Leu	Pro	Leu	Pro	Ser	Phe	
				245					250					255		
Arg	Arg	Arg	Asp	Arg	Ala	His	Arg	Glu	Ile	Lys	Asp	Ile	Phe	Tyr	Lys	
			260					265					270			
Ala	Ile	Gln	Lys	Arg	Arg	Gln	Ser	Gln	Glu	Lys	Ile	Asp	Asp	Ile	Leu	
		275					280					285				
Gln	Thr	Leu	Leu	Asp	Ala	Thr	Tyr	Lys	Asp	Gly	Arg	Pro	Leu	Thr	Asp	
	290					295					300					
Asp	Glu	Val	Ala	Gly	Met	Leu	Ile	Gly	Leu	Leu	Leu	Ala	Gly	Gln	His	
305					310					315					320	
Thr	Ser	Ser	Thr	Thr	Ser	Ala	Trp	Met	Gly	Phe	Phe	Leu	Ala	Arg	Asp	
				325					330					335		
Lys	Thr	Leu	Gln	Lys	Lys	Cys	Tyr	Leu	Glu	Gln	Lys	Thr	Val	Cys	Gly	
			340					345					350			
Glu	Asn	Leu	Pro	Pro	Leu	Thr	Tyr	Asp	Gln	Leu	Lys	Asp	Leu	Asn	Leu	
		355					360					365				
Leu	Asp	Arg	Cys	Ile	Lys	Glu	Thr	Leu	Arg	Leu	Arg	Pro	Pro	Ile	Met	
	370					375					380					
Ile	Met	Met	Arg	Met	Ala	Arg	Thr	Pro	Gln	Thr	Val	Ala	Gly	Tyr	Thr	
385					390					395					400	
Ile	Pro	Pro	Gly	His	Gln	Val	Cys	Val	Ser	Pro	Thr	Val	Asn	Gln	Arg	
				405					410					415		
Leu	Lys	Asp	Ser	Trp	Val	Glu	Arg	Leu	Asp	Phe	Asn	Pro	Asp	Arg	Tyr	
			420					425					430			
Leu	Gln	Asp	Asn	Pro	Ala	Ser	Gly	Glu	Lys	Phe	Ala	Tyr	Val	Pro	Phe	
		435					440					445				
Gly	Ala	Gly	Arg	His	Arg	Cys	Ile	Gly	Glu	Asn	Phe	Ala	Tyr	Val	Gln	
	450					455					460					
Ile	Lys	Thr	Ile	Trp	Ser	Thr	Met	Leu	Arg	Leu	Tyr	Glu	Phe	Asp	Leu	
465					470					475					480	
Ile	Asp	Gly	Tyr	Phe	Pro	Thr	Val	Asn	Tyr	Thr	Thr	Met	Ile	His	Thr	
				485					490					495		
Pro	Glu	Asn	Pro	Val	Ile	Arg	Tyr	Lys	Arg	Arg	Ser	Lys				
			500					505								

<210> 83  
 <211> 444  
 <212> DNA  
 <213> Homo sapiens

<400> 83  
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aatgccgagt tctgcccagc tcttggttct gagctgttag acttcttctt cattagtga 180  
cctctgttca agttaagtct tgccaaattt gatgccctc cggaagctgt tgcagccaag 240  
ttaggagtga agagatgcac ggatcagatg tcccttcaga aacgaagcct cattgcggaa 300  
gtcctgggtga aaatattgaa gaaatgtagt gtgtgacatg taaaaacttt catcctgggt 360  
tccactgtct ttcaatgaca ccctgatctt cactgcagaa tgtaaagggt tcaacgtctt 420  
gctttaataa atcacttgct ctac 444

<210> 84  
<211> 90  
<212> PRT  
<213> Homo sapiens

<400> 84  
Met Lys Leu Ser Val Cys Leu Leu Leu Val Thr Leu Ala Leu Cys Cys  
1 5 10 15  
Tyr Gln Ala Asn Ala Glu Phe Cys Pro Ala Leu Val Ser Glu Leu Leu  
20 25 30  
Asp Phe Phe Phe Ile Ser Glu Pro Leu Phe Lys Leu Ser Leu Ala Lys  
35 40 45  
Phe Asp Ala Pro Pro Glu Ala Val Ala Ala Lys Leu Gly Val Lys Arg  
50 55 60  
Cys Thr Asp Gln Met Ser Leu Gln Lys Arg Ser Leu Ile Ala Glu Val  
65 70 75 80  
Leu Val Lys Ile Leu Lys Lys Cys Ser Val  
85 90

<210> 85  
<211> 1780  
<212> DNA  
<213> Homo sapiens

<400> 85  
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gctcgcctcc ttggttgaag atttctcctt ccctcacgtg atttgagccc cgtttttatt 180  
ttctgtgagc cacgtcctcc tcgagcgggg tcaatctggc aaaaggagtg atgcgcttcg 240  
cctggaccgt gctcctgctc gggcctttgc agctctgcgc gctagtgcac tgcgcccctc 300  
ccgcccggc ccaacagcag ccccgcgcg agccgcccggc ggctccgggc gcctggcgcc 360  
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accagcctca gcgcccggc gacccgggcg ccgcccgtcc tggtgcagcc aacgcctccg 480  
cccagcagcc ccgactccg atcctgctga tccgcgacaa ccgcaccgcc gcggggcgaa 540  
cgcggaaggc cggctcatct ggagtcaccg ctggccgccc caggcccacc gcccgctcact 600  
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accagacagc gccgggagaa gttcctgctc tcagtaacct gcggccgccc agccgctggg 720  
acggcatggg gggcgacgac ccttacaacc cctacaagta ctctgacgac aacccttatt 780  
acaactacta cgatacttat gaaaggccca gacctggggg caggtaccgg cccggatacg 840  
gcactggcta cttccagtac ggtctcccag acctgggtggc cgaccctac tacatccagg 900  
cgtccacgta cgtgcagaag atgtccatgt acaacctgag atgcgcggcg gaggaaaact 960  
gtctggccag tacagcatac agggcagatg tcagagatta tgatcacagg gtgctgctca 1020  
gatttcccca aagagtgaag aaccaaggga catcagattt cttaccagc cgaccaagat 1080  
attcctggga atggcacagt tgtcatcaac attaccacag tatggatgag tttagccact 1140

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cacagggatt gagtcctggc tgttatgata cctatgggtgc agacatagac tgccagtgga 1320
ttgatattac agatgtaaaa cctggaaact atatcctaaa ggtcagtgtgta aaccccagct 1380
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tttcaataac aaagcacata actggatttt gaacgcttaa gtcatcatta cttgggaaat 1680
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acatatattga ctcttttcaaa aaaaaaaaaa aaaaaaaaaa 1780

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<210> 86  
 <211> 417  
 <212> PRT  
 <213> Homo sapiens

```

<400> 86
Met Arg Phe Ala Trp Thr Val Leu Leu Leu Gly Pro Leu Gln Leu Cys
 1             5             10             15

Ala Leu Val His Cys Ala Pro Pro Ala Ala Gly Gln Gln Gln Pro Pro
 20             25             30

Arg Glu Pro Pro Ala Ala Pro Gly Ala Trp Arg Gln Gln Ile Gln Trp
 35             40             45

Glu Asn Asn Gly Gln Val Phe Ser Leu Leu Ser Leu Gly Ser Gln Tyr
 50             55             60

Gln Pro Gln Arg Arg Arg Asp Pro Gly Ala Ala Val Pro Gly Ala Ala
 65             70             75             80

Asn Ala Ser Ala Gln Gln Pro Arg Thr Pro Ile Leu Leu Ile Arg Asp
 85             90             95

Asn Arg Thr Ala Ala Gly Arg Thr Arg Thr Ala Gly Ser Ser Gly Val
100             105             110

Thr Ala Gly Arg Pro Arg Pro Thr Ala Arg His Trp Phe Gln Ala Gly
115             120             125

Tyr Ser Thr Ser Arg Ala Arg Glu Ala Gly Pro Ser Arg Ala Glu Asn
130             135             140

Gln Thr Ala Pro Gly Glu Val Pro Ala Leu Ser Asn Leu Arg Pro Pro
145             150             155             160

Ser Arg Val Asp Gly Met Val Gly Asp Asp Pro Tyr Asn Pro Tyr Lys
165             170             175

Tyr Ser Asp Asp Asn Pro Tyr Tyr Asn Tyr Tyr Asp Thr Tyr Glu Arg
180             185             190

Pro Arg Pro Gly Gly Arg Tyr Arg Pro Gly Tyr Gly Thr Gly Tyr Phe
195             200             205

Gln Tyr Gly Leu Pro Asp Leu Val Ala Asp Pro Tyr Tyr Ile Gln Ala
210             215             220

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Ser	Thr	Tyr	Val	Gln	Lys	Met	Ser	Met	Tyr	Asn	Leu	Arg	Cys	Ala	Ala	
225					230					235					240	
Glu	Glu	Asn	Cys	Leu	Ala	Ser	Thr	Ala	Tyr	Arg	Ala	Asp	Val	Arg	Asp	
				245					250					255		
Tyr	Asp	His	Arg	Val	Leu	Leu	Arg	Phe	Pro	Gln	Arg	Val	Lys	Asn	Gln	
			260					265					270			
Gly	Thr	Ser	Asp	Phe	Leu	Pro	Ser	Arg	Pro	Arg	Tyr	Ser	Trp	Glu	Trp	
		275					280					285				
His	Ser	Cys	His	Gln	His	Tyr	His	Ser	Met	Asp	Glu	Phe	Ser	His	Leu	
	290					295					300					
Tyr	Leu	Leu	Asp	Ala	Asn	Thr	Gln	Arg	Arg	Trp	Ala	Glu	Gly	His	Lys	
305					310					315					320	
Ala	Ser	Phe	Cys	Leu	Glu	Asp	Thr	Ser	Cys	Asp	Tyr	Gly	Tyr	His	Arg	
				325					330					335		
Arg	Phe	Ala	Cys	Thr	Ala	His	Thr	Gln	Gly	Leu	Ser	Pro	Gly	Cys	Tyr	
			340					345					350			
Asp	Thr	Tyr	Gly	Ala	Asp	Ile	Asp	Cys	Gln	Trp	Ile	Asp	Ile	Thr	Asp	
		355					360					365				
Val	Lys	Pro	Gly	Asn	Tyr	Ile	Leu	Lys	Val	Ser	Val	Asn	Pro	Ser	Tyr	
	370					375					380					
Leu	Val	Pro	Glu	Ser	Asp	Tyr	Thr	Asn	Asn	Val	Val	Arg	Cys	Asp	Ile	
385					390					395					400	
Arg	Tyr	Thr	Gly	His	His	Ala	Tyr	Ala	Ser	Gly	Cys	Thr	Ile	Ser	Pro	
				405					410					415		

Tyr

<210> 87  
 <211> 1216  
 <212> DNA  
 <213> Homo sapiens

<400> 87

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atgctgctgg	tcagcagcct	ctctccagtc	caaggtgttc	tggaggtcta	ttacacaagc	180
ttgaggtgta	gatgtgtcca	agagagctca	gtctttatcc	ctagacgctt	cattgatcga	240
attcaaattct	tgccccgtgg	gaatggttgt	ccaagaaaag	aaatcatagt	ctggaagaag	300
aacaagtcaa	ttgtgtgtgt	ggaccctcaa	gctgaatgga	tacaaagaat	gatggaagta	360
ttgagaaaaa	gaagttcttc	aactctacca	gttccagtgt	ttaagagaaa	gattccctga	420
tgctgatatt	tccactaaga	acacctgcat	tcttccctta	tccctgctct	ggatttttagt	480
tttgtgctta	gttaaattctt	ttccagggag	aaagaacttc	cccatacaaa	taaggcatga	540
ggactatgtg	aaaaataacc	ttgcaggagc	tgatggggca	aactcaagct	tcttcactca	600
cagcacccta	tatacacttg	gagtttgcac	tcttattcat	cagggaggaa	agtttctttg	660
aaaatagttta	ttcagttata	agtaatacag	gattattttg	attatatact	tgttgttttaa	720
tgtttaaaaat	ttcttagaaa	acaatggaat	gagaatttaa	gcctcaaatt	tgaacatgtg	780
gcttgaatta	agaagaaaat	tatggcatat	attaaaagca	ggcttctatg	aaagactcaa	840
aaagctgcct	gggaggcaga	tggaacttga	gcctgtcaag	aggcaaagga	atccatgtag	900

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tagatatacct ctgcttaaaa actcactacg gaggagaatt aagtcctact tttaaagaat 960
ttctttataa aatttactgt ctaagattaa tagcattcga agatccccag acttcataga 1020
atactcaggg aaagcattta aagggtgatg tacacatgta tcctttcaca catttgcctt 1080
gacaaacttc tttcactcac atctttttca ctgacttttt ttgtgggggc ggggccgggg 1140
ggactctggt atctaattct ttaatgattc ctataaatct aatgacattc aataaagttg 1200
agcaaacatt ttactt 1216

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<210> 88  
 <211> 109  
 <212> PRT  
 <213> Homo sapiens

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<400> 88
Met Lys Phe Ile Ser Thr Ser Leu Leu Leu Met Leu Leu Val Ser Ser
  1              5              10              15

Leu Ser Pro Val Gln Gly Val Leu Glu Val Tyr Tyr Thr Ser Leu Arg
          20              25              30

Cys Arg Cys Val Gln Glu Ser Ser Val Phe Ile Pro Arg Arg Phe Ile
          35              40              45

Asp Arg Ile Gln Ile Leu Pro Arg Gly Asn Gly Cys Pro Arg Lys Glu
          50              55              60

Ile Ile Val Trp Lys Lys Asn Lys Ser Ile Val Cys Val Asp Pro Gln
          65              70              75              80

Ala Glu Trp Ile Gln Arg Met Met Glu Val Leu Arg Lys Arg Ser Ser
          85              90              95

Ser Thr Leu Pro Val Pro Val Phe Lys Arg Lys Ile Pro
          100              105

```

<210> 89  
 <211> 576  
 <212> DNA  
 <213> Homo sapiens

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<400> 89
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caggacaaca ctcggaagat cataataaag aattttgaca ttcccaagtc agtacgtcca 180
aatgacgaag tcaactgcagt gcttgcagtt caaacagaat tgaaagaatg catggtggtt 240
aaaacttacc tcattagcag catccctcta caaggtgcat ttaactataa gtatactgcc 300
tgcctatgtg acgacaatcc aaaaaccttc tactgggact ttacaccaa cagaactgtg 360
caaattgcag ccgtcgttga tggtattcgg gaattaggca tctgccctga tgatgctgct 420
gtaatcccca tcaaaaacaa ccggttttat actattgaaa tcctaaaggt agaataatgg 480
aagccctgtc tgtttgccac acccaggtga ttctctctaa agaaacttgg ctggaatttc 540
tgctgtggtc tataaaataa acttcttaac atgctt 576

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<210> 90  
 <211> 145  
 <212> PRT  
 <213> Homo sapiens



<400> 90  
Met Arg Leu Leu Gln Leu Leu Phe Arg Ala Ser Pro Ala Thr Leu Leu  
1 5 10 15  
Leu Val Leu Cys Leu Gln Leu Gly Ala Asn Lys Ala Gln Asp Asn Thr  
20 25 30  
Arg Lys Ile Ile Ile Lys Asn Phe Asp Ile Pro Lys Ser Val Arg Pro  
35 40 45  
Asn Asp Glu Val Thr Ala Val Leu Ala Val Gln Thr Glu Leu Lys Glu  
50 55 60  
Cys Met Val Val Lys Thr Tyr Leu Ile Ser Ser Ile Pro Leu Gln Gly  
65 70 75 80  
Ala Phe Asn Tyr Lys Tyr Thr Ala Cys Leu Cys Asp Asp Asn Pro Lys  
85 90 95  
Thr Phe Tyr Trp Asp Phe Tyr Thr Asn Arg Thr Val Gln Ile Ala Ala  
100 105 110  
Val Val Asp Val Ile Arg Glu Leu Gly Ile Cys Pro Asp Asp Ala Ala  
115 120 125  
Val Ile Pro Ile Lys Asn Asn Arg Phe Tyr Thr Ile Glu Ile Leu Lys  
130 135 140  
Val  
145

<210> 91  
<211> 2340  
<212> DNA  
<213> Homo sapiens

<400> 91  
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gccgcgccac agccgctgcg gatcatggaa catctaaagg cctttgatga tgaaatcaat 120  
gcttttttgg acaatatgtt tggaccgcga gattctcgag tcagaggggtg gttcacgttg 180  
gactcttacc ttcctacctt ttttcttact gtcattgtatc tgctctcaat atggctgggt 240  
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cttggaatca cacttctctc cgcgtacatg ctggcagagc tcattctctc cacttgggaa 360  
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gccaagggtgc tttggtggta ctatttctcc aaatcagtag agttcctgga cacaattttc 480  
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gagttcataa atcatttgta cccagaatgt attaatatat tgctattagg ttaatctgtt 1140  
aactgaatgc tttgatcagc attgaggtga tgctcacctc cgaggacctc agaactggtg 1200  
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gccttatacg catacacagc caggaaacgt ggagcattgt ttctcacaga gagtctccaa 1320  
ataaaaaggg ttttggttcag attaaaatgt ttacaacaaa atgttaatta tattctaaat 1380

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<210> 92

<211> 296

<212> PRT

<213> Homo sapiens

<400> 92

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Met Glu His Leu Lys Ala Phe Asp Asp Glu Ile Asn Ala Phe Leu Asp
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Asn Met Phe Gly Pro Arg Asp Ser Arg Val Arg Gly Trp Phe Thr Leu
      20              25              30

Asp Ser Tyr Leu Pro Thr Phe Phe Leu Thr Val Met Tyr Leu Leu Ser
      35              40              45

Ile Trp Leu Gly Asn Lys Tyr Met Lys Asn Arg Pro Ala Leu Ser Leu
      50              55              60

Arg Gly Ile Leu Thr Leu Tyr Asn Leu Gly Ile Thr Leu Leu Ser Ala
      65              70              75              80

Tyr Met Leu Ala Glu Leu Ile Leu Ser Thr Trp Glu Gly Gly Tyr Asn
      85              90              95

Leu Gln Cys Gln Asp Leu Thr Ser Ala Gly Glu Ala Asp Ile Arg Val
      100             105             110

Ala Lys Val Leu Trp Trp Tyr Tyr Phe Ser Lys Ser Val Glu Phe Leu
      115             120             125

Asp Thr Ile Phe Phe Val Leu Arg Lys Lys Thr Ser Gln Ile Thr Phe
      130             135             140

Leu His Val Tyr His His Ala Ser Met Phe Asn Ile Trp Trp Cys Val
      145             150             155             160

Leu Asn Trp Ile Pro Cys Gly Gln Ser Phe Phe Gly Pro Thr Leu Asn
      165             170             175

Ser Phe Val His Ile Leu Met Tyr Ser Tyr Tyr Gly Leu Ser Val Phe
      180             185             190

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Pro Ser Met His Lys Tyr Leu Trp Trp Lys Lys Tyr Leu Thr Gln Ala  
195 200 205

Gln Leu Val Gln Phe Val Leu Thr Ile Thr His Thr Met Ser Ala Val  
210 215 220

Val Lys Pro Cys Gly Phe Pro Phe Gly Cys Leu Ile Phe Gln Ser Ser  
225 230 235 240

Tyr Met Leu Thr Leu Val Ile Leu Phe Leu Asn Phe Tyr Val Gln Thr  
245 250 255

Tyr Arg Lys Lys Pro Met Lys Lys Asp Met Gln Glu Pro Pro Ala Gly  
260 265 270

Lys Glu Val Lys Asn Gly Phe Ser Lys Ala Tyr Phe Thr Ala Ala Asn  
275 280 285

Gly Val Met Asn Lys Lys Ala Gln  
290 295

<210> 93  
<211> 4321  
<212> DNA  
<213> Homo sapiens

<400> 93

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aagggacgca	ccacgccagc	cccagcccgg	ctccagcgac	agccaacgcc	tcttgccagcg	180
cggcggttcc	gaagccgccc	cccggagctg	ccctttcctc	ttcgggtgaag	tttttaaaag	240
ctgctaaaga	ctcggaggaa	gcaaggaaag	tgcttggtag	gactgacggc	tgctttgttc	300
ctcctcctct	ccaccccggc	tccccccacc	ctgccttccc	cccctcccc	gtcttctctc	360
ccgcagctgc	ctcagtcggc	tactctcagc	caacccccct	caccaccctt	ctccccacc	420
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<210> 94
<211> 919
<212> PRT
<213> Homo sapiens

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Val Ile Gln Asn Pro Gly Pro Arg His Pro Glu Ala Ala Ser Ala Ala
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Pro Pro Gly Ala Ser Leu Leu Leu Leu Gln Gln Gln Gln Gln Gln
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<211> 2119

<212> DNA

<213> Homo sapiens

<400> 95

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<210> 96  
 <211> 445  
 <212> PRT  
 <213> Homo sapiens

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Lys Gln Met Leu Val Ser Glu Val Asn Leu Leu Arg Glu Leu Lys His
      50              55              60

Pro Asn Ile Val Arg Tyr Tyr Asp Arg Ile Ile Asp Arg Thr Asn Thr
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Thr Leu Tyr Ile Val Met Glu Tyr Cys Glu Gly Gly Asp Leu Ala Ser
      85              90              95

Val Ile Thr Lys Gly Thr Lys Glu Arg Gln Tyr Leu Asp Glu Glu Phe
      100              105              110

Val Leu Arg Val Met Thr Gln Leu Thr Leu Ala Leu Lys Glu Cys His
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Arg Arg Ser Asp Gly Gly His Thr Val Leu His Arg Asp Leu Lys Pro
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Ala Asn Val Phe Leu Asp Gly Lys Gln Asn Val Lys Leu Gly Asp Phe
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Tyr	His	Arg	Pro	Ser	Val	Glu	Glu	Ile	Leu	Glu	Asn	Pro	Leu	Ile	Ala	260	265	270
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Arg	Glu	Arg	Leu	Ala	Glu	Asp	Lys	Leu	Ala	Arg	Ala	Glu	Asn	Leu	Leu	340	345	350
Lys	Asn	Tyr	Ser	Leu	Leu	Lys	Glu	Arg	Lys	Phe	Leu	Ser	Leu	Ala	Ser	355	360	365
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His	Phe	Ser	Gly	Glu	Ser	Lys	Glu	Asn	Ile	Met	Arg	Ser	Glu	Asn	Ser	385	390	395
Glu	Ser	Gln	Leu	Thr	Ser	Lys	Ser	Lys	Cys	Lys	Asp	Leu	Lys	Lys	Arg	405	410	415
Leu	His	Ala	Ala	Gln	Leu	Arg	Ala	Gln	Ala	Leu	Ser	Asp	Ile	Glu	Lys	420	425	430
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<210> 97  
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 <213> Homo sapiens

<400> 97

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aaacaaaata aatcaacttt ttaaaaaagc cagcactgtg ctgtcaatgt tttttttttc 12480
ttttcaattc tagctcagaa aagcagaagg taaataatgt cagggtcaatg aatatcagat 12540
atattttttg actgtacatt acagtgaagt gtaatctttt tacacctgca agtccatctt 12600
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acaataaagc tgtgaccctg 12680

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<210> 98

<211> 1444

<212> PRT

<213> Homo sapiens

<400> 98

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Met Ala Ser Leu Ala Ala Leu Ala Leu Ser Leu Leu Leu Arg Leu Gln
  1                      5                      10                      15

```

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Leu Pro Pro Leu Pro Gly Ala Arg Ala Gln Ser Ala Pro Gly Gly Cys
          20                      25                      30

```

```

Ser Phe Asp Glu His Tyr Ser Asn Cys Gly Tyr Ser Val Ala Leu Gly
          35                      40                      45

```

```

Thr Asn Gly Phe Thr Trp Glu Gln Ile Asn Thr Thr Glu Lys Pro Met
          50                      55                      60

```

```

Leu Asp Gln Ala Val Pro Thr Gly Ser Phe Met Met Val Asn Ser Ser
          65                      70                      75                      80

```

```

Gly Arg Ala Ser Gly Gln Lys Ala His Leu Leu Leu Pro Thr Leu Lys
          85                      90                      95

```

```

Glu Asn Asp Thr His Cys Ile Asp Phe His Tyr Tyr Phe Ser Ser Arg
          100                      105                      110

```

```

Asp Arg Ser Ser Pro Gly Ala Leu Asn Val Tyr Val Lys Val Asn Gly
          115                      120                      125

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Gly Pro Gln Gly Asn Pro Val Trp Asn Val Ser Gly Val Val Thr Glu  
 130 135 140

Gly Trp Val Lys Ala Glu Leu Ala Ile Ser Thr Phe Trp Pro His Phe  
 145 150 155 160

Tyr Gln Val Ile Phe Glu Ser Val Ser Leu Lys Gly His Pro Gly Tyr  
 165 170 175

Ile Ala Val Asp Glu Val Arg Val Leu Ala His Pro Cys Arg Lys Ala  
 180 185 190

Pro His Phe Leu Arg Leu Gln Asn Val Glu Val Asn Val Gly Gln Asn  
 195 200 205

Ala Thr Phe Gln Cys Ile Ala Gly Gly Lys Trp Ser Gln His Asp Lys  
 210 215 220

Leu Trp Leu Gln Gln Trp Asn Gly Arg Asp Thr Ala Leu Met Val Thr  
 225 230 235 240

Arg Val Val Asn His Arg Arg Phe Ser Ala Thr Val Ser Val Ala Asp  
 245 250 255

Thr Ala Gln Arg Ser Val Ser Lys Tyr Arg Cys Val Ile Arg Ser Asp  
 260 265 270

Gly Gly Ser Gly Val Ser Asn Tyr Ala Glu Leu Ile Val Lys Glu Pro  
 275 280 285

Pro Thr Pro Ile Ala Pro Pro Glu Leu Leu Ala Val Gly Ala Thr Tyr  
 290 295 300

Leu Trp Ile Lys Pro Asn Ala Asn Ser Ile Ile Gly Asp Gly Pro Ile  
 305 310 315 320

Ile Leu Lys Glu Val Glu Tyr Arg Thr Thr Thr Gly Thr Trp Ala Glu  
 325 330 335

Thr His Ile Val Asp Ser Pro Asn Tyr Lys Leu Trp His Leu Asp Pro  
 340 345 350

Asp Val Glu Tyr Glu Ile Arg Val Leu Leu Thr Arg Pro Gly Glu Gly  
 355 360 365

Gly Thr Gly Pro Pro Gly Ala Pro Leu Thr Thr Arg Thr Lys Cys Ala  
 370 375 380

Asp Pro Val His Gly Pro Gln Asn Val Glu Ile Val Asp Ile Arg Ala  
 385 390 395 400

Arg Gln Leu Thr Leu Gln Trp Glu Pro Phe Gly Tyr Ala Val Thr Arg  
 405 410 415

Cys His Ser Tyr Asn Leu Thr Val Gln Tyr Gln Tyr Val Phe Asn Gln  
 420 425 430

Gln Gln Tyr Glu Ala Glu Glu Val Ile Gln Thr Ser Ser His Tyr Thr  
 435 440 445

Leu Arg Gly Leu Arg Pro Phe Met Thr Ile Arg Leu Arg Leu Leu Leu  
 450 455 460  
 Ser Asn Pro Glu Gly Arg Met Glu Ser Glu Glu Leu Val Val Gln Thr  
 465 470 475 480  
 Glu Glu Asp Val Pro Gly Ala Val Pro Leu Glu Ser Ile Gln Gly Gly  
 485 490 495  
 Pro Phe Glu Glu Lys Ile Tyr Ile Gln Trp Lys Pro Pro Asn Glu Thr  
 500 505 510  
 Asn Gly Val Ile Thr Leu Tyr Glu Ile Asn Tyr Lys Ala Val Gly Ser  
 515 520 525  
 Leu Asp Pro Ser Ala Asp Leu Ser Ser Gln Arg Gly Lys Val Phe Lys  
 530 535 540  
 Leu Arg Asn Glu Thr His His Leu Phe Val Gly Leu Tyr Pro Gly Thr  
 545 550 555 560  
 Thr Tyr Ser Phe Thr Ile Lys Ala Ser Thr Ala Lys Gly Phe Gly Pro  
 565 570 575  
 Pro Val Thr Thr Arg Ile Ala Thr Lys Ile Ser Ala Pro Ser Met Pro  
 580 585 590  
 Glu Tyr Asp Thr Asp Thr Pro Leu Asn Glu Thr Asp Thr Thr Ile Thr  
 595 600 605  
 Val Met Leu Lys Pro Ala Gln Ser Arg Gly Ala Pro Val Ser Val Tyr  
 610 615 620  
 Gln Leu Val Val Lys Glu Glu Arg Leu Gln Lys Ser Arg Arg Ala Ala  
 625 630 635 640  
 Asp Ile Ile Glu Cys Phe Ser Val Pro Val Ser Tyr Arg Asn Ala Ser  
 645 650 655  
 Ser Leu Asp Ser Leu His Tyr Phe Ala Ala Glu Leu Lys Pro Ala Asn  
 660 665 670  
 Leu Pro Val Thr Gln Pro Phe Thr Val Gly Asp Asn Lys Thr Tyr Asn  
 675 680 685  
 Gly Tyr Trp Asn Pro Pro Leu Ser Pro Leu Lys Ser Tyr Ser Ile Tyr  
 690 695 700  
 Phe Gln Ala Leu Ser Lys Ala Asn Gly Glu Thr Lys Ile Asn Cys Val  
 705 710 715 720  
 Arg Leu Ala Thr Thr Gly Ala Ser Thr Gln Asn Ser Asn Thr Val Glu  
 725 730 735  
 Pro Glu Lys Gln Val Asp Asn Thr Val Lys Met Ala Gly Val Ile Ala  
 740 745 750  
 Gly Leu Leu Met Phe Ile Ile Ile Leu Leu Gly Val Met Leu Thr Ile  
 755 760 765

Lys Arg Arg Arg Asn Ala Tyr Ser Tyr Ser Tyr Tyr Leu Ser Gln Arg  
 770 775 780  
 Lys Leu Ala Lys Lys Gln Lys Glu Thr Gln Ser Gly Ala Gln Arg Glu  
 785 790 795 800  
 Met Gly Pro Val Ala Ser Ala Asp Lys Pro Thr Thr Lys Leu Ser Ala  
 805 810 815  
 Ser Arg Asn Asp Glu Gly Phe Ser Ser Ser Ser Gln Asp Val Asn Gly  
 820 825 830  
 Phe Thr Asp Gly Ser Arg Gly Glu Leu Ser Gln Pro Thr Leu Thr Ile  
 835 840 845  
 Gln Thr His Pro Tyr Arg Thr Cys Asp Pro Val Glu Met Ser Tyr Pro  
 850 855 860  
 Arg Asp Gln Phe Gln Leu Ala Ile Arg Val Ala Asp Leu Leu Gln His  
 865 870 875 880  
 Ile Thr Gln Met Lys Arg Gly Gln Gly Tyr Gly Phe Lys Glu Glu Tyr  
 885 890 895  
 Glu Ala Leu Pro Glu Gly Gln Thr Ala Ser Trp Asp Thr Ala Lys Glu  
 900 905 910  
 Asp Glu Asn Arg Asn Lys Asn Arg Tyr Gly Asn Ile Ile Ser Tyr Asp  
 915 920 925  
 His Ser Arg Val Arg Leu Leu Val Leu Asp Gly Asp Pro His Ser Asp  
 930 935 940  
 Tyr Ile Asn Ala Asn Tyr Ile Asp Gly Tyr His Arg Pro Arg His Tyr  
 945 950 955 960  
 Ile Ala Thr Gln Gly Pro Met Gln Glu Thr Val Lys Asp Phe Trp Arg  
 965 970 975  
 Met Ile Trp Gln Glu Asn Ser Ala Ser Ile Val Met Val Thr Asn Leu  
 980 985 990  
 Val Glu Val Gly Arg Val Lys Cys Val Arg Tyr Trp Pro Asp Asp Thr  
 995 1000 1005  
 Glu Val Tyr Gly Asp Ile Lys Val Thr Leu Ile Glu Thr Glu Pro Leu  
 1010 1015 1020  
 Ala Glu Tyr Val Ile Arg Thr Phe Thr Val Gln Lys Lys Gly Tyr His  
 1025 1030 1035 1040  
 Glu Ile Arg Glu Leu Arg Leu Phe His Phe Thr Ser Trp Pro Asp His  
 1045 1050 1055  
 Gly Val Pro Cys Tyr Ala Thr Gly Leu Leu Gly Phe Val Arg Gln Val  
 1060 1065 1070  
 Lys Phe Leu Asn Pro Pro Glu Ala Gly Pro Ile Val Val His Cys Ser  
 1075 1080 1085

Ala Gly Ala Gly Arg Thr Gly Cys Phe Ile Ala Ile Asp Thr Met Leu  
 1090 1095 1100  
 Asp Met Ala Glu Asn Glu Gly Val Val Asp Ile Phe Asn Cys Val Arg  
 1105 1110 1115 1120  
 Glu Leu Arg Ala Gln Arg Val Asn Leu Val Gln Thr Glu Glu Gln Tyr  
 1125 1130 1135  
 Val Phe Val His Asp Ala Ile Leu Glu Ala Cys Leu Cys Gly Asn Thr  
 1140 1145 1150  
 Ala Ile Pro Val Cys Glu Phe Arg Ser Leu Tyr Tyr Asn Ile Ser Arg  
 1155 1160 1165  
 Leu Asp Pro Gln Thr Asn Ser Ser Gln Ile Lys Asp Glu Phe Gln Thr  
 1170 1175 1180  
 Leu Asn Ile Val Thr Pro Arg Val Arg Pro Glu Asp Cys Ser Ile Gly  
 1185 1190 1195 1200  
 Leu Leu Pro Arg Asn His Asp Lys Asn Arg Ser Met Asp Val Leu Pro  
 1205 1210 1215  
 Leu Asp Arg Cys Leu Pro Phe Leu Ile Ser Val Asp Gly Glu Ser Ser  
 1220 1225 1230  
 Asn Tyr Ile Asn Ala Ala Leu Met Asp Ser His Lys Gln Pro Ala Ala  
 1235 1240 1245  
 Phe Val Val Thr Gln His Pro Leu Pro Asn Thr Val Ala Asp Phe Trp  
 1250 1255 1260  
 Arg Leu Val Phe Asp Tyr Asn Cys Ser Ser Val Val Met Leu Asn Glu  
 1265 1270 1275 1280  
 Met Asp Thr Ala Gln Phe Cys Met Gln Tyr Trp Pro Glu Lys Thr Ser  
 1285 1290 1295  
 Gly Cys Tyr Gly Pro Ile Gln Val Glu Phe Val Ser Ala Asp Ile Asp  
 1300 1305 1310  
 Glu Asp Ile Ile His Arg Ile Phe Arg Ile Cys Asn Met Ala Arg Pro  
 1315 1320 1325  
 Gln Asp Gly Tyr Arg Ile Val Gln His Leu Gln Tyr Ile Gly Trp Pro  
 1330 1335 1340  
 Ala Tyr Arg Asp Thr Pro Pro Ser Lys Arg Ser Leu Leu Lys Val Val  
 1345 1350 1355 1360  
 Arg Arg Leu Glu Lys Trp Gln Glu Gln Tyr Asp Gly Arg Glu Gly Arg  
 1365 1370 1375  
 Thr Val Val His Cys Leu Asn Gly Gly Gly Arg Ser Gly Thr Phe Cys  
 1380 1385 1390  
 Ala Ile Cys Ser Val Cys Glu Met Ile Gln Gln Gln Asn Ile Ile Asp  
 1395 1400 1405

Val Phe His Ile Val Lys Thr Leu Arg Asn Asn Lys Ser Asn Met Val  
 1410 1415 1420

Glu Thr Leu Glu Gln Tyr Lys Phe Val Tyr Glu Val Ala Leu Glu Tyr  
 1425 1430 1435 1440

Leu Ser Ser Phe

<210> 99  
 <211> 803  
 <212> DNA  
 <213> Homo sapiens

<400> 99  
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 ctgctcctgt gcacaagttg gtaccaacaa agagctctgc tgcctcgtct atacctcctg 180  
 gcagattcca caaaagttca tagttgacta ttctgaaacc agccccagct gcccgaagcc 240  
 aggtgtcatc ctccctaacca agagaggccg gcagatctgt gctgacccca ataagaagtg 300  
 ggtccagaaa tacatcagcg acctgaagct gaatgcctga ggggcctgga agctgcgagg 360  
 gccagtgaa cttggtgggc ccaggaggga acaggagcct gagccagggc aatggccctg 420  
 ccaccctgga ggccacctct tctaagagtc ccatctgcta tgcccagcca cattaactaa 480  
 ctttaatctt agtttatgca tcatatttca ttttgaaatt gatttctatt gttgagctgc 540  
 attatgaaat tagtattttc tctgacatct catgacattg tctttatcat cctttcccct 600  
 ttcccttcaa ctcttcgtac attcaatgca tggatcaatc agtgtgatta gctttctcag 660  
 cagacattgt gccatatgta tcaaatgaca aatctttatt gaatggtttt gctcagcacc 720  
 accttttaat atattggcag tacttattat ataaaaggta aaccagcatt ctcactgtga 780  
 aaaaaaaaaa aaaaaaaaaa aaa 803

<210> 100  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 100  
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 Leu Cys Ser Cys Ala Gln Val Gly Thr Asn Lys Glu Leu Cys Cys Leu  
 20 25 30  
 Val Tyr Thr Ser Trp Gln Ile Pro Gln Lys Phe Ile Val Asp Tyr Ser  
 35 40 45  
 Glu Thr Ser Pro Gln Cys Pro Lys Pro Gly Val Ile Leu Leu Thr Lys  
 50 55 60  
 Arg Gly Arg Gln Ile Cys Ala Asp Pro Asn Lys Lys Trp Val Gln Lys  
 65 70 75 80  
 Tyr Ile Ser Asp Leu Lys Leu Asn Ala  
 85

<210> 101  
 <211> 2398  
 <212> DNA  
 <213> Homo sapiens



<400> 101

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cgccctgcc gcggtgcctg gcctcccctc ccagactgca gggacagcac ccggtaactg 120
cgagtggagc ggaggacccg agcggctgag gagagaggag gcggcggctt agctgctacg 180
gggtccggcc ggcgcccctc cgagggggggc tcaggaggag gaaggaggac ccgtgcgaga 240
atgcctctgc cctggagcct tgcgctcccg ctgctgctct cctgggtggc aggtgggttc 300
gggaacgcgg ccagtgcaag gcatcacggg ttgttagcat cggcacgtca gcctggggtc 360
tgtcactatg gaactaaact ggctgctgc tacggctgga gaagaaacag caagggagtc 420
tgtgaagcta catgcgaacc tggatgtaag tttggtgagt gcgtgggacc aaacaaatgc 480
agatgctttc caggatacac cgggaaaacc tgcagtcaag atgtgaatga gtgtggaatg 540
aaaccccggc catgccaaca cagatgtgtg aatacacacg gaagctacaa gtgcttttgc 600
ctcagtggcc acatgctcat gccagatgct acgtgtgtga actctaggac atgtgccatg 660
ataaactgtc agtacagctg tgaagacaca gaagaagggc cacagtgcct gtgtccatcc 720
tcaggactcc gcctggcccc aaatggaaga gactgtctag atattgatga atgtgcctct 780
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aaatgtcaca ttggtttcga actgcaatat atcagtggac gatatgactg tatagatata 900
aatgaatgta ctatggatag ccatacgtgc agccaccatg ccaattgctt caatacccaa 960
gggtcccttca agtgtaaattg caagcagggg tataaaggca atggacttcg gtgttctgct 1020
atccctgaaa attctgtgaa ggaagtcctc agagcacctg gtaccatcaa agacagaatc 1080
aagaagttgc ttgctcacia aaacagcatg aaaaagaagg caaaaattaa aaatgttacc 1140
ccagaaccca ccaggactcc tacccttaag gtgaacttgc agcccttcaa ctatgaagag 1200
atagtttcca gaggcgggaa ctctcatgga ggtaaaaaag ggaatgaaga gaaaatgaaa 1260
gaggggcttg aggatgagaa aagagaagag aaagccctga agaattgacat agaggagcga 1320
agcctgcgag gagatgtgtt tttccctaag gtgaatgaag caggtgaatt cggcctgatt 1380
ctggtccaaa ggaaagcgct aacttccaaa ctggaacata aagatttaaa tatctcggtt 1440
gactgcagct tcaatcatgg gatctgtgac tggaaacagg atagagaaga tgattttgac 1500
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ggtcacaaga aagacattgg ccgattgaaa cttctcctac ctgacctgca accccaaagc 1620
aacttctgtt tgctctttga ttaccggctg gccggagaca aagtcgggaa acttcgagtg 1680
tttgtgaaaa acagtaacaa tgccctggca tgggagaaga ccacgagtga ggatgaaaag 1740
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gaagcagaac gtggcaaggg caaaaccggc gaaatcgcag tggatggcgt cttgcttggt 1860
tcaggcttat gtccagatag ctttttatct gtggatgact gaatgttact atctttatat 1920
ttgactttgt atgtcagttc cctgggtttt ttgatattgc atcataggac ctctggcatt 1980
ttagaattac tagctgaaaa attgtaatgt accaacagaa atattattgt aagatgcctt 2040
tcttgataaa gatatgcaa tatttgcttt aaatatcata tcaactgtatc ttctcagtca 2100
tttctgaatc tttccacatt atattataaa atatggaaat gtcagtttat ctcccctcct 2160
cagtatatct gatttgata agtaagttga tgagcttctc tctacaacat ttctagaaaa 2220
tagaaaaaaa agcacagaga aatgtttaac tgtttgactc ttatgatact tcttggaaac 2280
tatgacatca aagatagact tttgcctaag tggcttagct gggctcttca tagccaaact 2340
tgtatattta aattctttgt aataataata tccaaatcat caaaaaaaaa aaaaaaaaaa 2398
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<210> 102

<211> 553

<212> PRT

<213> Homo sapiens

<400> 102

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Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Leu Ser Trp Val
  1                      5                      10                      15
```

```
Ala Gly Gly Phe Gly Asn Ala Ala Ser Ala Arg His His Gly Leu Leu
      20                      25                      30
```

```
Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr Gly Thr Lys Leu Ala
      35                      40                      45
```

```
Cys Cys Tyr Gly Trp Arg Arg Asn Ser Lys Gly Val Cys Glu Ala Thr
      50                      55                      60
```

Cys Glu Pro Gly Cys Lys Phe Gly Glu Cys Val Gly Pro Asn Lys Cys  
 65 70 75 80  
 Arg Cys Phe Pro Gly Tyr Thr Gly Lys Thr Cys Ser Gln Asp Val Asn  
 85 90 95  
 Glu Cys Gly Met Lys Pro Arg Pro Cys Gln His Arg Cys Val Asn Thr  
 100 105 110  
 His Gly Ser Tyr Lys Cys Phe Cys Leu Ser Gly His Met Leu Met Pro  
 115 120 125  
 Asp Ala Thr Cys Val Asn Ser Arg Thr Cys Ala Met Ile Asn Cys Gln  
 130 135 140  
 Tyr Ser Cys Glu Asp Thr Glu Glu Gly Pro Gln Cys Leu Cys Pro Ser  
 145 150 155 160  
 Ser Gly Leu Arg Leu Ala Pro Asn Gly Arg Asp Cys Leu Asp Ile Asp  
 165 170 175  
 Glu Cys Ala Ser Gly Lys Val Ile Cys Pro Tyr Asn Arg Arg Cys Val  
 180 185 190  
 Asn Thr Phe Gly Ser Tyr Tyr Cys Lys Cys His Ile Gly Phe Glu Leu  
 195 200 205  
 Gln Tyr Ile Ser Gly Arg Tyr Asp Cys Ile Asp Ile Asn Glu Cys Thr  
 210 215 220  
 Met Asp Ser His Thr Cys Ser His His Ala Asn Cys Phe Asn Thr Gln  
 225 230 235 240  
 Gly Ser Phe Lys Cys Lys Cys Lys Gln Gly Tyr Lys Gly Asn Gly Leu  
 245 250 255  
 Arg Cys Ser Ala Ile Pro Glu Asn Ser Val Lys Glu Val Leu Arg Ala  
 260 265 270  
 Pro Gly Thr Ile Lys Asp Arg Ile Lys Lys Leu Leu Ala His Lys Asn  
 275 280 285  
 Ser Met Lys Lys Lys Ala Lys Ile Lys Asn Val Thr Pro Glu Pro Thr  
 290 295 300  
 Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro Phe Asn Tyr Glu Glu  
 305 310 315 320  
 Ile Val Ser Arg Gly Gly Asn Ser His Gly Gly Lys Lys Gly Asn Glu  
 325 330 335  
 Glu Lys Met Lys Glu Gly Leu Glu Asp Glu Lys Arg Glu Glu Lys Ala  
 340 345 350  
 Leu Lys Asn Asp Ile Glu Glu Arg Ser Leu Arg Gly Asp Val Phe Phe  
 355 360 365  
 Pro Lys Val Asn Glu Ala Gly Glu Phe Gly Leu Ile Leu Val Gln Arg  
 370 375 380

Lys Ala Leu Thr Ser Lys Leu Glu His Lys Asp Leu Asn Ile Ser Val  
 385 390 395 400  
 Asp Cys Ser Phe Asn His Gly Ile Cys Asp Trp Lys Gln Asp Arg Glu  
 405 410 415  
 Asp Asp Phe Asp Trp Asn Pro Ala Asp Arg Asp Asn Ala Ile Gly Phe  
 420 425 430  
 Tyr Met Ala Val Pro Ala Leu Ala Gly His Lys Lys Asp Ile Gly Arg  
 435 440 445  
 Leu Lys Leu Leu Leu Pro Asp Leu Gln Pro Gln Ser Asn Phe Cys Leu  
 450 455 460  
 Leu Phe Asp Tyr Arg Leu Ala Gly Asp Lys Val Gly Lys Leu Arg Val  
 465 470 475 480  
 Phe Val Lys Asn Ser Asn Asn Ala Leu Ala Trp Glu Lys Thr Thr Ser  
 485 490 495  
 Glu Asp Glu Lys Trp Lys Thr Gly Lys Ile Gln Leu Tyr Gln Gly Thr  
 500 505 510  
 Asp Ala Thr Lys Ser Ile Ile Phe Glu Ala Glu Arg Gly Lys Gly Lys  
 515 520 525  
 Thr Gly Glu Ile Ala Val Asp Gly Val Leu Leu Val Ser Gly Leu Cys  
 530 535 540  
 Pro Asp Ser Leu Leu Ser Val Asp Asp  
 545 550

<210> 103  
 <211> 1120  
 <212> DNA  
 <213> Homo sapiens

<400> 103  
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 attcaaggag tacctctctc tagaaccgta cgctgtacct gcatacagcat tagtaatcaa 180  
 cctgttaatc caaggtcttt agaaaaactt gaaattatcc ctgcaagcca attttgtcca 240  
 cgtgttgaga tcattgctac aatgaaaaag aaggggtgaga agagatgtct gaatccagaa 300  
 tcgaaggcca tcaagaattt actgaaagca gtttagcaagg aaatgtctaa aagatctcct 360  
 taaaaccaga ggggagcaaa atcgatgcag tgcttccaag gatggaccac acagaggctg 420  
 cctctcccat cacttcccta catggagtat atgtcaagcc ataattgttc ttagtttgca 480  
 gttacactaa aaggtgacca atgatggtca ccaaatcagc tgctactact cctgtaggaa 540  
 ggttaatggt catcatccta agctattcag taataactct accctggcac tataatgtaa 600  
 gctctactga ggtgctatgt tcttagtgga tgttctgacc ctgcttcaaa tatttccctc 660  
 acctttccca tcttccaagg gtactaagga atctttctgc tttgggggtt atcagaattc 720  
 tcagaatctc aaataactaa aaggtatgca atcaaactct ctttttaaaag aatgctcttt 780  
 acttcatgga cttccactgc catcctccca aggggcccac attctttcag tggctaccta 840  
 catacaattc caaacacata caggaaggta gaaatatctg aaaatgtatg tgtaagtatt 900  
 cttatttaat gaaagactgt acaaagtata agtcttagat gtatatattt cctatatatt 960  
 tttcagtgt catggaataa catgtaatta agtactatgt atcaatgagt aacaggaaaa 1020  
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 ttttcaaata aaaatgaggt actctcctgg aaatattaag 1120

<210> 104  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 104  
 Met Asn Gln Thr Ala Ile Leu Ile Cys Cys Leu Ile Phe Leu Thr Leu  
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 Ser Gly Ile Gln Gly Val Pro Leu Ser Arg Thr Val Arg Cys Thr Cys  
                   20                  25                  30  
 Ile Ser Ile Ser Asn Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu  
           35                  40                  45  
 Glu Ile Ile Pro Ala Ser Gln Phe Cys Pro Arg Val Glu Ile Ile Ala  
   50                  55                  60  
 Thr Met Lys Lys Lys Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys  
   65                  70                  75                  80  
 Ala Ile Lys Asn Leu Leu Lys Ala Val Ser Lys Glu Met Ser Lys Arg  
                   85                  90                  95  
 Ser Pro

<210> 105  
 <211> 6253  
 <212> DNA  
 <213> Homo sapiens

<400> 105  
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 aacaacaaca acaacaactc caagcacacc ggccataaga gtgcgtgtgt cccaacatg 120  
 accgaacgaa gaagggacga gctctctgaa gagatcaaca acttaagaga gaaggtcatg 180  
 aagcagtcgg aggagaacaa caacctgcag agccagggtgc agaagctcac agaggagaac 240  
 accacccttc gagagcaagt ggaaccacc cctgaggatg aggatgatga catcgagctc 300  
 cgcggtgctg cagcagctgc tgccccaccc cctccaatag aggaagagtg cccagaagac 360  
 ctcccagaga agttcgatgg caaccagac atgctggctc ctttcatggc ccagtgccag 420  
 atcttcatgg aaaagagcac cagggatttc tcagttgatc gtgtccgtgt ctgcttcgtg 480  
 acaagcatga tgaccggccg tgctgcccgt tgggcctcag caaagctgga gcgctccac 540  
 tacctgatgc acaactaccc agctttcatg atggaaatga agcatgtctt tgaagaccct 600  
 cagaggcgag aggttgccaa acgcaagatc agacgcctgc gccaaggcat ggggtctgtc 660  
 atcgactact ccaatgcttt ccagatgatt gcccaggacc tggattggaa cgagcctgcg 720  
 ctgattgacc agtaccacga gggcctcagc gaccacattc aggaggagct ctcccacctc 780  
 gaggtcgcca agtcgctgtc tgctctgatt gggcagtgca ttcacattga gagaaggctg 840  
 gccagggctg ctgcagctcg caagccacgc tcgccacccc gggcgctggg gttgcctcac 900  
 attgcaagcc accaccaggt agatccaacc gagccgggtg gaggtgcccg catgcgcctg 960  
 acgcaggaag aaaaagaaag acgcagaaag ctgaacctgt gcctctactg tggaacagga 1020  
 ggtcactacg ctgacaattg tcctgccaaag gcctcaaagt cttcgccggc gggaaactcc 1080  
 ccggccccgc tgtagaggga ccttcagcga ccgggcccaga aataataagg tccccacaag 1140  
 atgatgcctc atctccacac ttgcaagtga tgctccagat tcattcttcg ggcagacaca 1200  
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 <213> Homo sapiens

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Ser Leu Leu Lys Asp Glu Ala Leu Ala Ile Ala Ala Leu Glu Leu Leu
  35             40             45

Pro Arg Glu Leu Phe Pro Pro Leu Phe Met Ala Ala Phe Asp Gly Arg
  50             55             60

His Ser Gln Thr Leu Lys Ala Met Val Gln Ala Trp Pro Phe Thr Cys
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Leu Pro Leu Gly Val Leu Met Lys Gly Gln His Leu His Leu Glu Thr
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Phe Lys Ala Val Leu Asp Gly Leu Asp Val Leu Leu Ala Gln Glu Val
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Arg Pro Arg Arg Trp Lys Leu Gln Val Leu Asp Leu Arg Lys Asn Ser
 115             120             125

His Gln Asp Phe Trp Thr Val Trp Ser Gly Asn Arg Ala Ser Leu Tyr
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Ser Phe Pro Glu Pro Glu Ala Ala Gln Pro Met Thr Lys Lys Arg Lys
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Val Asp Gly Leu Ser Thr Glu Ala Glu Gln Pro Phe Ile Pro Val Glu
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Glu	Gln	Cys	Asp	Cys	Gly	Phe	Leu	Asp	Asp	Cys	Val	Asp	Pro	Cys	Cys	435	440	445	
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Gly	Pro	Cys	Cys	Gln	Asn	Cys	Gln	Leu	Arg	Pro	Ser	Gly	Trp	Gln	Cys	465	470	475	480
Arg	Pro	Thr	Arg	Gly	Asp	Cys	Asp	Leu	Pro	Glu	Phe	Cys	Pro	Gly	Asp	485	490	495	
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 Cys Arg Ser Lys Cys His Gly His Gly Val Cys Asp Ser Asn Arg His  
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 Cys Tyr Cys Glu Glu Gly Trp Ala Pro Pro Asp Cys Thr Thr Gln Leu  
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 <212> DNA  
 <213> Homo sapiens

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<213> Homo sapiens

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Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp  
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Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala  
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 <212> PRT  
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 35 40 45  
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 50 55 60  
 Pro Glu Val Ile Ser Ile Tyr Asn Ser Thr Arg Asp Leu Leu Gln Glu  
 65 70 75 80  
 Lys Ala Ser Arg Arg Ala Ala Ala Cys Glu Arg Glu Arg Ser Asp Glu  
 85 90 95



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			180					185					190			
Arg	Ala	Glu	Gly	Glu	Trp	Leu	Ser	Phe	Asp	Val	Thr	Asp	Ala	Val	His	
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Glu	Trp	Leu	His	His	Lys	Asp	Arg	Asn	Leu	Gly	Phe	Lys	Ile	Ser	Leu	
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His	Cys	Pro	Cys	Cys	Thr	Phe	Val	Pro	Ser	Asn	Asn	Tyr	Ile	Ile	Pro	
225					230					235					240	
Asn	Lys	Ser	Glu	Glu	Leu	Glu	Ala	Arg	Phe	Ala	Gly	Ile	Asp	Gly	Thr	
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Ser	Thr	Tyr	Thr	Ser	Gly	Asp	Gln	Lys	Thr	Ile	Lys	Ser	Thr	Arg	Lys	
			260					265					270			
Lys	Asn	Ser	Gly	Lys	Thr	Pro	His	Leu	Leu	Leu	Met	Leu	Leu	Pro	Ser	
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Tyr	Arg	Leu	Glu	Ser	Gln	Gln	Thr	Asn	Arg	Arg	Lys	Lys	Arg	Ala	Leu	
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Asp	Ala	Ala	Tyr	Cys	Phe	Arg	Asn	Val	Gln	Asp	Asn	Cys	Cys	Leu	Arg	
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Pro	Leu	Tyr	Ile	Asp	Phe	Lys	Arg	Asp	Leu	Gly	Trp	Lys	Trp	Ile	His	
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Leu	Trp	Ser	Ser	Asp	Thr	Gln	His	Ser	Arg	Val	Leu	Ser	Leu	Tyr	Asn	
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Thr	Ile	Asn	Pro	Glu	Ala	Ser	Ala	Ser	Pro	Cys	Cys	Val	Ser	Gln	Asp	
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 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
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 Asp Gly Ile Gly Asp Ala Cys Asp Asn Cys Pro Gln Lys Ser Asn Pro  
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 420 425 430  
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 450 455 460  
 Gly Asp Ala Cys Asp Asp Asp Asp Asp Asn Asp Gly Val Pro Asp Ser  
 465 470 475 480  
 Arg Asp Asn Cys Arg Leu Val Pro Asn Pro Gly Gln Glu Asp Ala Asp  
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 Arg Asp Gly Val Gly Asp Val Cys Gln Asp Asp Phe Asp Ala Asp Lys  
 500 505 510  
 Val Val Asp Lys Ile Asp Val Cys Pro Glu Asn Ala Glu Val Thr Leu  
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 Val Gln Thr Met Asn Ser Asp Pro Gly Leu Ala Val Gly Tyr Thr Ala  
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 Asp Asp Asp Tyr Ala Gly Phe Ile Phe Gly Tyr Gln Asp Ser Ser Ser  
 595 600 605  
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 610 615 620  
 Asn Pro Phe Arg Ala Val Ala Glu Pro Gly Ile Gln Leu Lys Ala Val  
 625 630 635 640  
 Lys Ser Ser Thr Gly Pro Gly Glu Gln Leu Arg Asn Ala Leu Trp His  
 645 650 655  
 Thr Gly Asp Thr Glu Ser Gln Val Arg Leu Leu Trp Lys Asp Pro Arg  
 660 665 670

Asn Val Gly Trp Lys Asp Lys Lys Ser Tyr Arg Trp Phe Leu Gln His  
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 690 695 700  
 Leu Val Ala Asp Ser Asn Val Val Leu Asp Thr Thr Met Arg Gly Gly  
 705 710 715 720  
 Arg Leu Gly Val Phe Cys Phe Ser Gln Glu Asn Ile Ile Trp Ala Asn  
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 <211> 3264  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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Ser Asp Lys Leu Ser Leu Pro Gly Phe Glu Asn Leu Thr Ala Gly Tyr
 35                      40                      45

Asn Lys Phe Leu Arg Pro Asn Phe Gly Gly Glu Pro Val Gln Ile Ala
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Leu Thr Leu Asp Ile Ala Ser Ile Ser Ser Ile Ser Glu Ser Asn Met
 65                      70                      75                      80

Asp Tyr Thr Ala Thr Ile Tyr Leu Arg Gln Arg Trp Met Asp Gln Arg
 85                      90                      95

Leu Val Phe Glu Gly Asn Lys Ser Phe Thr Leu Asp Ala Arg Leu Val
100                      105                      110

Glu Phe Leu Trp Val Pro Asp Thr Tyr Ile Val Glu Ser Lys Lys Ser
115                      120                      125

Phe Leu His Glu Val Thr Val Gly Asn Arg Leu Ile Arg Leu Phe Ser
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Asn Gly Thr Val Leu Tyr Ala Leu Arg Ile Thr Thr Thr Val Ala Cys
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Asn Met Asp Leu Ser Lys Tyr Pro Met Asp Thr Gln Thr Cys Lys Leu
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 Gln Tyr Thr Ile Glu Arg Tyr Phe Thr Leu Val Thr Arg Ser Gln Gln  
 210 215 220  
 Glu Thr Gly Asn Tyr Thr Arg Leu Val Leu Gln Phe Glu Leu Arg Arg  
 225 230 235 240  
 Asn Val Leu Tyr Phe Ile Leu Glu Thr Tyr Val Pro Ser Thr Phe Leu  
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 Val Val Leu Ser Trp Val Ser Phe Trp Ile Ser Leu Asp Ser Val Pro  
 260 265 270  
 Ala Arg Thr Cys Ile Gly Val Thr Thr Val Leu Ser Met Thr Thr Leu  
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 290 295 300  
 Ala Ile Asp Val Tyr Leu Gly Ile Cys Phe Ser Phe Val Phe Gly Ala  
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 Ala Lys Asp Arg Gly Thr Thr Lys Glu Val Glu Glu Val Ser Ile Thr  
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<210> 121  
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<211> 1806

<212> PRT

<213> Homo sapiens

<220>

<221> MOD\_RES

<222> (1)..(1806)

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 Asn Gly His Gly Ala Tyr Gly Glu Lys Gly Gln Lys Gly Glu Pro Ala  
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 Pro Ala Gly Ile Met Gly Pro Pro Gly Leu Gln Gly Pro Thr Gly Pro  
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 Phe Arg Tyr Gly Gly Asp Gly Ser Lys Gly Pro Thr Ile Ser Ala Gln  
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 Glu Thr Gly Pro Ile Gly Glu Arg Gly Tyr Pro Gly Pro Pro Gly Pro  
 980 985 990



Pro Gly Glu Gln Gly Leu Pro Gly Ala Ala Gly Lys Glu Gly Ala Lys  
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 1075 1080 1085  
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 1090 1095 1100  
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 Ser Pro Gly Glu Asp Gly Asp Lys Gly Glu Ile Gly Glu Pro Gly Gln  
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 Asp Ser Ala Asp Ile Pro Lys Ala Arg Arg Lys Arg Tyr Ile Ser Gln  
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 Val Phe Pro Pro Ala Ala Asn Met Glu Tyr Met Val Trp Asp Glu Asn  
                   85                  90                  95  
 Leu Ala Lys Ser Ala Glu Ala Trp Ala Ala Thr Cys Ile Trp Asp His  
                   100                  105                  110  
 Gly Pro Ser Tyr Leu Leu Arg Phe Leu Gly Gln Asn Leu Ser Val Arg  
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 Thr Gly Arg Tyr Arg Ser Ile Leu Gln Leu Val Lys Pro Trp Tyr Asp  
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 Glu Val Lys Asp Tyr Ala Phe Pro Tyr Pro Gln Asp Cys Asn Pro Arg  
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Glu	Lys	Val	Pro	Glu	Tyr	Thr	Leu	Thr	Ile	Gln	Ala	Thr	Asp	Met	Asp	290	295	300
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Ala	Asn	Asp	Asn	Ala	Pro	Met	Phe	Asp	Pro	Gln	Lys	Tyr	Glu	Ala	His	325	330	335
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Val	Gln	Glu	Gly	Ile	Pro	Thr	Gly	Glu	Pro	Val	Cys	Val	Tyr	Thr	Ala	450	455	460
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Ile	Tyr	Glu	Val	Met	Val	Leu	Ala	Met	Asp	Asn	Gly	Ser	Pro	Pro	Thr	515	520	525
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Gly	Pro	Val	Pro	Glu	Pro	Arg	Gln	Ile	Thr	Ile	Cys	Asn	Gln	Ser	Pro	545	550	555 560
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Ser	Pro	Phe	Gln	Ala	Gln	Leu	Thr	Asp	Asp	Ser	Asp	Ile	Tyr	Trp	Thr	580	585	590
Ala	Glu	Val	Asn	Glu	Glu	Gly	Asp	Thr	Val	Val	Leu	Ser	Leu	Lys	Lys	595	600	605

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645 650 655  
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660 665 670  
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675 680 685  
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690 695 700  
Gly Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg  
705 710 715 720  
Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala Pro  
725 730 735  
Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn Pro Asp  
740 745 750  
Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala Asn Thr Asp  
755 760 765  
Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe Asp Tyr Glu Gly  
770 775 780  
Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu Thr Ser Ser Ala Ser  
785 790 795 800  
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<211> 1189

<212> DNA

<213> Homo sapiens

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<211> 224

<212> PRT

<213> Homo sapiens

<400> 128

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          35              40              45

Arg Ala Lys Ile Ser Ser Glu Lys Val Val Pro Ala Ser Ala Asp Pro
          50              55              60

Ala Asp Thr Glu Lys Met Leu Arg Tyr Glu Ile Lys Gln Ile Lys Met
          65              70              75              80

Phe Lys Gly Phe Glu Lys Val Lys Asp Val Gln Tyr Ile Tyr Thr Pro
          85              90              95

Phe Asp Ser Ser Leu Cys Gly Val Lys Leu Glu Ala Asn Ser Gln Lys
          100             105             110

Gln Tyr Leu Leu Thr Gly Gln Val Leu Ser Asp Gly Lys Val Phe Ile
          115             120             125

His Leu Cys Asn Tyr Ile Glu Pro Trp Glu Asp Leu Ser Leu Val Gln
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Arg Glu Ser Leu Asn His His Tyr His Leu Asn Cys Gly Cys Gln Ile
          145             150             155             160

Thr Thr Cys Tyr Thr Val Pro Cys Thr Ile Ser Ala Pro Asn Glu Cys
          165             170             175

Leu Trp Thr Asp Trp Leu Leu Glu Arg Lys Leu Tyr Gly Tyr Gln Ala
          180             185             190

Gln His Tyr Val Cys Met Lys His Val Asp Gly Thr Cys Ser Trp Tyr
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Arg Gly His Leu Pro Leu Arg Lys Glu Phe Val Asp Ile Val Gln Pro
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 <212> DNA  
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 <212> PRT  
 <213> Homo sapiens

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 Gly Ser Ala Asn Pro Gly Ser Asn Ser His Pro Pro Val Ile Ala Thr  
 35 40 45

Thr	Val	Val	Ser	Leu	Lys	Ala	Ala	Asn	Leu	Thr	Tyr	Met	Pro	Ser	Ser		
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Ser	Gly	Ser	Ala	Arg	Ser	Leu	Asn	Cys	Gly	Cys	Ser	Ser	Ala	Ser	Cys		
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Cys	Thr	Val	Ala	Thr	Tyr	Asp	Lys	Asp	Asn	Gln	Ala	Gln	Thr	Gln	Ala		
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Ile	Ala	Ala	Gly	Thr	Thr	Thr	Thr	Ala	Ile	Gly	Thr	Ser	Thr	Thr	Cys		
			100					105					110				
Pro	Ala	Asn	Gln	Met	Val	Asn	Asn	Asn	Glu	Asn	Thr	Gly	Ser	Leu	Ser		
		115					120					125					
Pro	Ser	Ser	Gly	Val	Gly	Ser	Pro	Val	Ser	Gly	Thr	Pro	Lys	Gln	Leu		
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Ala	Ser	Ile	Lys	Ile	Ile	Tyr	Pro	Asn	Asp	Leu	Ala	Lys	Lys	Met	Thr		
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Cys	Arg	Pro	Phe	Met	Glu	Tyr	Asn	Lys	Ser	His	Ile	Gln	Gly	Ala	Val		
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His	Ile	Asn	Cys	Ala	Asp	Lys	Ile	Ser	Arg	Arg	Arg	Leu	Gln	Gln	Gly		
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Lys	Ile	Thr	Val	Leu	Asp	Leu	Ile	Ser	Cys	Arg	Glu	Gly	Lys	Asp	Ser		
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Phe	Lys	Arg	Ile	Phe	Ser	Lys	Glu	Ile	Ile	Val	Tyr	Asp	Glu	Asn	Thr		
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Glu	Ser	Leu	Lys	Arg	Glu	Gly	Lys	Glu	Pro	Leu	Val	Leu	Lys	Gly	Gly		
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Leu	Ser	Ser	Phe	Lys	Gln	Asn	His	Glu	Asn	Leu	Cys	Asp	Asn	Ser	Leu		
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Gln	Leu	Gln	Glu	Cys	Arg	Glu	Val	Gly	Gly	Gly	Ala	Ser	Ala	Ala	Ser		
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Ser	Leu	Leu	Pro	Gln	Pro	Ile	Pro	Thr	Thr	Pro	Asp	Ile	Glu	Asn	Ala		
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Ala	Gln	Asp	Leu	Asp	Thr	Met	Gln	Arg	Leu	Asn	Ile	Gly	Tyr	Val	Ile		
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Asn	Val	Thr	Thr	His	Leu	Pro	Leu	Tyr	His	Tyr	Glu	Lys	Gly	Leu	Phe		
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Asn	Tyr	Lys	Arg	Leu	Pro	Ala	Thr	Asp	Ser	Asn	Lys	Gln	Asn	Leu	Arg
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Gln	Tyr	Phe	Glu	Glu	Ala	Phe	Glu	Phe	Ile	Glu	Glu	Ala	His	Gln	Cys
385					390					395					400
Gly	Lys	Gly	Leu	Leu	Ile	His	Cys	Gln	Ala	Gly	Val	Ser	Arg	Ser	Ala
			405					410						415	
Thr	Ile	Val	Ile	Ala	Tyr	Leu	Met	Lys	His	Thr	Arg	Met	Thr	Met	Thr
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Asp	Ala	Tyr	Lys	Phe	Val	Lys	Gly	Lys	Arg	Pro	Ile	Ile	Ser	Pro	Asn
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Leu	Asn	Phe	Met	Gly	Gln	Leu	Leu	Glu	Phe	Glu	Glu	Asp	Leu	Asn	Asn
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Val	Val														

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 <211> 1493  
 <212> DNA  
 <213> Homo sapiens

<400> 131

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<210> 132  
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 <212> PRT  
 <213> Homo sapiens

<400> 132  
 Met Ser Val Lys Gly Met Ala Ile Ala Leu Ala Val Ile Leu Cys Ala  
           1                  5                  10                  15  
 Thr Val Val Gln Gly Phe Pro Met Phe Lys Arg Gly Arg Cys Leu Cys  
                   20                  25                  30  
 Ile Gly Pro Gly Val Lys Ala Val Lys Val Ala Asp Ile Glu Lys Ala  
                   35                  40                  45  
 Ser Ile Met Tyr Pro Ser Asn Asn Cys Asp Lys Ile Glu Val Ile Ile  
           50                  55                  60  
 Thr Leu Lys Glu Asn Lys Gly Gln Arg Cys Leu Asn Pro Lys Ser Lys  
           65                  70                  75                  80  
 Gln Ala Arg Leu Ile Ile Lys Lys Val Glu Arg Lys Asn Phe  
                   85                  90

<210> 133  
 <211> 1521  
 <212> DNA  
 <213> Homo sapiens

<400> 133  
 ctggcgcggg cgaggagctgc ggcggataacc cttgcgtgct gtggagagacc tactctcttc 60  
 gctgagaacg gccgctagcg gggactgaag gccgggagcc cactcccagc ccgggggctag 120  
 cgtgcgtccc tagagtcgag cggggcaagg gagccagtgg ccgccgacgg gggaccggga 180  
 aacttttctg ggctcctgga gagccctgta gccgcgctcc atgctccggc agcggcccga 240  
 aaccagccc cgccgctgac ggagcccgcc gctccgggca gggcccatgc cctgcgcgct 300  
 ccggggggtcg tagctgccgc cgagccgggg ctccggaagc cggcgggggc gccgcggccg 360  
 tgcggggcgt caatggatcg ccactccagc tacatcttca tctggctgca gctggagctc 420  
 tgcgccatgg ccgtgctgct caccaaagggt gaaattcgat gctactgtga tgctgcccac 480  
 tgtgtagcca ctggttatat gtgtaaatct gagctcagcg cctgcttctc tagacttctt 540  
 gatcctcaga actcaaattc ccactcacc catggctgcc tggactctct tgcaagcacg 600  
 acagacatct gccaagccaa acaggcccga aaccactctg gcaccacat acccacattg 660  
 gaatgctgtc atgaagacat gtgcaattac agagggctgc acgatgttct ctctcctccc 720  
 aggggtgagg cctcaggaca aggaaacagg tatcagcatg atggtagcag aaaccttatt 780  
 accaagggtgc aggagctgac ttcttccaaa gagttgtggt tccgggcagc ggtcattgcc 840  
 gtgcccattg ctggagggct gatttttagtg ttgcttatta tgttgccctt gaggatgctt 900  
 cgaagtgaaa ataagaggct gcaggatcag cggcaacaga tgctctcccg tttgcactac 960  
 agctttcacg gacaccattc caaaaagggg caggttgcaa agttagactt ggaatgcatg 1020  
 gtgccggtca gtgggcacga gaactgctgt ctgacctgtg ataaatgag acaagcagac 1080  
 ctcagcaacg ataagatcct ctcgcttggt cactggggca tgtacagtgg gcacgggaag 1140  
 ctggaattcg tatgacggag tcttatctga actacactta ctgaacagct tgaaggcctt 1200  
 ttgagttctg ctggacagga gcactttatc tgaagacaaa ctcatttaat catctttgag 1260  
 agacaaaatg acctctgcaa acagaatctt ggatatcttct tctgaaggat tatttgcaca 1320  
 gacttaaata cagttaaata tggtatttgc ttttaaaatt ataaaaagca aagagaagac 1380  
 tttgtacaca ctgtcaccag gggtatttgc atccaaggga gctggaattg agtacctaaa 1440  
 taaacaaaaa tgtgccctat gtaagcttct acatcttgat ttattgtaaa gatttaaaag 1500  
 aaatatatat attttgtctg a 1521

<210> 134  
 <211> 260  
 <212> PRT  
 <213> Homo sapiens

<400> 134  
 Met Asp Arg His Ser Ser Tyr Ile Phe Ile Trp Leu Gln Leu Glu Leu  
   1                  5                  10                  15  
 Cys Ala Met Ala Val Leu Leu Thr Lys Gly Glu Ile Arg Cys Tyr Cys  
                   20                  25                  30  
 Asp Ala Ala His Cys Val Ala Thr Gly Tyr Met Cys Lys Ser Glu Leu  
           35                  40                  45  
 Ser Ala Cys Phe Ser Arg Leu Leu Asp Pro Gln Asn Ser Asn Ser Pro  
       50                  55                  60  
 Leu Thr His Gly Cys Leu Asp Ser Leu Ala Ser Thr Thr Asp Ile Cys  
   65                  70                  75                  80  
 Gln Ala Lys Gln Ala Arg Asn His Ser Gly Thr Thr Ile Pro Thr Leu  
                   85                  90                  95  
 Glu Cys Cys His Glu Asp Met Cys Asn Tyr Arg Gly Leu His Asp Val  
                   100                  105                  110  
 Leu Ser Pro Pro Arg Gly Glu Ala Ser Gly Gln Gly Asn Arg Tyr Gln  
       115                  120                  125  
 His Asp Gly Ser Arg Asn Leu Ile Thr Lys Val Gln Glu Leu Thr Ser  
       130                  135                  140  
 Ser Lys Glu Leu Trp Phe Arg Ala Ala Val Ile Ala Val Pro Ile Ala  
   145                  150                  155                  160  
 Gly Gly Leu Ile Leu Val Leu Leu Ile Met Leu Ala Leu Arg Met Leu  
                   165                  170                  175  
 Arg Ser Glu Asn Lys Arg Leu Gln Asp Gln Arg Gln Gln Met Leu Ser  
                   180                  185                  190  
 Arg Leu His Tyr Ser Phe His Gly His His Ser Lys Lys Gly Gln Val  
       195                  200                  205  
 Ala Lys Leu Asp Leu Glu Cys Met Val Pro Val Ser Gly His Glu Asn  
       210                  215                  220  
 Cys Cys Leu Thr Cys Asp Lys Met Arg Gln Ala Asp Leu Ser Asn Asp  
   225                  230                  235                  240  
 Lys Ile Leu Ser Leu Val His Trp Gly Met Tyr Ser Gly His Gly Lys  
                   245                  250                  255  
 Leu Glu Phe Val  
                   260

<210> 135  
 <211> 2539  
 <212> DNA  
 <213> Homo sapiens

<400> 135  
 cgggacgacg cccctcctg cggcgtggac tccgtcagtg gcccaccaag aaggaggagg 60  
 aatatggaat ccaagggggc cagttcctgc cgtctgctct tctgcctctt gatctccgcc 120  
 accgtcttca ggccaggcct tggatgggat actgtaaatt cagcatatgg agataccatt 180  
 atcatacctt gccgacttga cgtacctcag aatctcatgt ttggcaaatt gaaatatgaa 240  
 aagcccgatg gctccccagt atttattgcc ttcagatcct ctacaaagaa aagtgtgcag 300  
 tacgacgatg taccagaata caaagacaga ttgaacctct cagaaaacta cactttgtct 360  
 atcagtaatg caaggatcag tgatgaaaag agatttgtgt gcatgctagt aactgaggac 420  
 aacgtgtttg aggacacctac aatagtcaag gtgttcaagc aaccatctaa acctgaaatt 480  
 gtaagcaaag cactgtttct cgaaacagag cagctaaaaa agttgggtga ctgcatttca 540  
 gaagacagtt atccagatgg caatatcaca tgggtacagga atggaaaagt gctacatccc 600  
 cttgaaggag cgggtggatcat aattttttaa aaggaaatgg acccagtgcac tcagctctat 660  
 accatgactt ccaccctgga gtacaagaca accaaggctg acatacaaat gccattcacc 720  
 tgctcgggtga catattatgg accatctggc cagaaaacaa ttcattctga acaggcagta 780  
 tttgatattt actatcctac agagcagggtg acaatacaag tgctgccacc aaaaaatgcc 840  
 atcaaagaag gggataacat cactcttaaa tgcttaggga atggcaaccc tccccagag 900  
 gaatttttgt tttacttacc aggacagccc gaaggaataa gaagctcaaa tacttacaca 960  
 ctgatggatg tgaggcgcaa tgcaacagga gactacaagt gttccctgat agacaaaaaa 1020  
 agcatgattg cttcaacagc catcacagtt cactatttgg atttgcctt aaaccaagt 1080  
 ggagaagtga ctagacagat tgggtgatgcc ctaccctgtg catgcacaat atctgctagc 1140  
 aggaatgcaa ctgtggtatg gatgaaagat aacatcaggc ttcgatctag cccgtcattt 1200  
 tctagtcttc attatcagga tgctggaaac tatgtctgcg aaactgctct gcaggagggt 1260  
 gaaggactaa agaaaagaga gtcattgact ctcatgttag aaggcaaacc tcaaataaaa 1320  
 atgacaaaga aaactgatcc cagtggacta tctaaaacaa taatctgcca tgtggaaggt 1380  
 tttccaaagc cagccattca gtggacaatt actggcagtg gaagcgtcat aaaccaaaca 1440  
 gaggaatctc cttatatataa tggcagggtat tatagtaaaa ttatcatttc ccctgaagag 1500  
 aatgtttacat taacttgcac agcagaaaac caactggaga gaacagtaaa ctccttgaat 1560  
 gtctctgcta taagtattcc agaacacgat gaggcagacg agataagtga tgaaaacaga 1620  
 gaaaagggtga atgaccaggc aaaactaatt gtgggaatcg ttgttgggtc ctccttgct 1680  
 gcccttggtg ctggtgtcgt ctactggctg tacatgaaga agtcaaagac tgcatacaaa 1740  
 catgtaaaca aggacctcgg taatatggaa gaaaacaaaa agttagaaga aaacaatcac 1800  
 aaaactgaag cctaagagag aaactgtcct agttgtccag agataaaaat catatagacc 1860  
 aattgaagca tgaacgtgga ttgtatttaa gacataaaca aagacattga cagcaattca 1920  
 tggttcaagt attaagcagt tcattctacc aagctgtcac aggttttcag agaattatct 1980  
 caagtaaaac aaatgaaatt taattacaaa caataagaac aagttttggc agccatgata 2040  
 ataggtcata tgttgtgttt gggtcaattt tttttccgta aatgtctgca ctgaggattt 2100  
 ctttttggtt tgctttttat gtaaattttt tacgtagcta tttttataca ctgtaagctt 2160  
 tgttctggga gttgctgtta atctgatgta taatgtaatg tttttatttc aattgtttat 2220  
 atggataatc tgagcaggta catttctgat tctgattgct atcagcaatg ccccaaactt 2280  
 tctcataagc acctaaaacc caaagggtggc agcttgtgaa gattggggac actcatattg 2340  
 ccctaattaa aaactgtgat ttttatcaca agggagggga ggccgagagt cagactgata 2400  
 gacaccatag gagccgactc tttgatatgc caccagcgaa ctctcagaaa taaatcacag 2460  
 atgcatatag acacacatac ataatggtac tcccaaactg acaattttac ctattctgaa 2520  
 aaagacataa aacagaatt 2539

<210> 136  
 <211> 583  
 <212> PRT  
 <213> Homo sapiens

<400> 136  
 Met Glu Ser Lys Gly Ala Ser Ser Cys Arg Leu Leu Phe Cys Leu Leu  
 1 5 10 15

Ile	Ser	Ala	Thr	Val	Phe	Arg	Pro	Gly	Leu	Gly	Trp	Tyr	Thr	Val	Asn	
			20					25						30		
Ser	Ala	Tyr	Gly	Asp	Thr	Ile	Ile	Ile	Pro	Cys	Arg	Leu	Asp	Val	Pro	
		35					40					45				
Gln	Asn	Leu	Met	Phe	Gly	Lys	Trp	Lys	Tyr	Glu	Lys	Pro	Asp	Gly	Ser	
	50					55					60					
Pro	Val	Phe	Ile	Ala	Phe	Arg	Ser	Ser	Thr	Lys	Lys	Ser	Val	Gln	Tyr	
	65				70					75					80	
Asp	Asp	Val	Pro	Glu	Tyr	Lys	Asp	Arg	Leu	Asn	Leu	Ser	Glu	Asn	Tyr	
				85					90					95		
Thr	Leu	Ser	Ile	Ser	Asn	Ala	Arg	Ile	Ser	Asp	Glu	Lys	Arg	Phe	Val	
			100					105						110		
Cys	Met	Leu	Val	Thr	Glu	Asp	Asn	Val	Phe	Glu	Ala	Pro	Thr	Ile	Val	
		115					120					125				
Lys	Val	Phe	Lys	Gln	Pro	Ser	Lys	Pro	Glu	Ile	Val	Ser	Lys	Ala	Leu	
	130					135					140					
Phe	Leu	Glu	Thr	Glu	Gln	Leu	Lys	Lys	Leu	Gly	Asp	Cys	Ile	Ser	Glu	
	145				150					155					160	
Asp	Ser	Tyr	Pro	Asp	Gly	Asn	Ile	Thr	Trp	Tyr	Arg	Asn	Gly	Lys	Val	
				165					170					175		
Leu	His	Pro	Leu	Glu	Gly	Ala	Val	Val	Ile	Ile	Phe	Lys	Lys	Glu	Met	
			180					185						190		
Asp	Pro	Val	Thr	Gln	Leu	Tyr	Thr	Met	Thr	Ser	Thr	Leu	Glu	Tyr	Lys	
		195					200					205				
Thr	Thr	Lys	Ala	Asp	Ile	Gln	Met	Pro	Phe	Thr	Cys	Ser	Val	Thr	Tyr	
	210					215					220					
Tyr	Gly	Pro	Ser	Gly	Gln	Lys	Thr	Ile	His	Ser	Glu	Gln	Ala	Val	Phe	
	225				230					235					240	
Asp	Ile	Tyr	Tyr	Pro	Thr	Glu	Gln	Val	Thr	Ile	Gln	Val	Leu	Pro	Pro	
				245					250					255		
Lys	Asn	Ala	Ile	Lys	Glu	Gly	Asp	Asn	Ile	Thr	Leu	Lys	Cys	Leu	Gly	
			260					265					270			
Asn	Gly	Asn	Pro	Pro	Pro	Glu	Glu	Phe	Leu	Phe	Tyr	Leu	Pro	Gly	Gln	
		275					280					285				
Pro	Glu	Gly	Ile	Arg	Ser	Ser	Asn	Thr	Tyr	Thr	Leu	Met	Asp	Val	Arg	
	290					295					300					
Arg	Asn	Ala	Thr	Gly	Asp	Tyr	Lys	Cys	Ser	Leu	Ile	Asp	Lys	Lys	Ser	
	305				310					315					320	
Met	Ile	Ala	Ser	Thr	Ala	Ile	Thr	Val	His	Tyr	Leu	Asp	Leu	Ser	Leu	
				325					330					335		

Asn Pro Ser Gly Glu Val Thr Arg Gln Ile Gly Asp Ala Leu Pro Val  
 340 345 350  
 Ser Cys Thr Ile Ser Ala Ser Arg Asn Ala Thr Val Val Trp Met Lys  
 355 360 365  
 Asp Asn Ile Arg Leu Arg Ser Ser Pro Ser Phe Ser Ser Leu His Tyr  
 370 375 380  
 Gln Asp Ala Gly Asn Tyr Val Cys Glu Thr Ala Leu Gln Glu Val Glu  
 385 390 395 400  
 Gly Leu Lys Lys Arg Glu Ser Leu Thr Leu Ile Val Glu Gly Lys Pro  
 405 410 415  
 Gln Ile Lys Met Thr Lys Lys Thr Asp Pro Ser Gly Leu Ser Lys Thr  
 420 425 430  
 Ile Ile Cys His Val Glu Gly Phe Pro Lys Pro Ala Ile Gln Trp Thr  
 435 440 445  
 Ile Thr Gly Ser Gly Ser Val Ile Asn Gln Thr Glu Glu Ser Pro Tyr  
 450 455 460  
 Ile Asn Gly Arg Tyr Tyr Ser Lys Ile Ile Ile Ser Pro Glu Glu Asn  
 465 470 475 480  
 Val Thr Leu Thr Cys Thr Ala Glu Asn Gln Leu Glu Arg Thr Val Asn  
 485 490 495  
 Ser Leu Asn Val Ser Ala Ile Ser Ile Pro Glu His Asp Glu Ala Asp  
 500 505 510  
 Glu Ile Ser Asp Glu Asn Arg Glu Lys Val Asn Asp Gln Ala Lys Leu  
 515 520 525  
 Ile Val Gly Ile Val Val Gly Leu Leu Leu Ala Ala Leu Val Ala Gly  
 530 535 540  
 Val Val Tyr Trp Leu Tyr Met Lys Lys Ser Lys Thr Ala Ser Lys His  
 545 550 555 560  
 Val Asn Lys Asp Leu Gly Asn Met Glu Glu Asn Lys Lys Leu Glu Glu  
 565 570 575  
 Asn Asn His Lys Thr Glu Ala  
 580

<210> 137  
 <211> 1119  
 <212> DNA  
 <213> Homo sapiens

<400> 137  
 atgaaccgca gccaccggca cggggcgggc agcggctgcc tgggcactat ggaggtgaag 60  
 agcaagtgtg gagctgaatt tcgtcgggtt tcgctggaaa gatcaaaacc tggaaaattt 120  
 gaggagtttt atggattact acaacatgtt cataagatcc ccaatgttga cgttttggtta 180  
 ggctatgcag acatccatgg agacttacta cctataaata atgatgataa ttatcacaaa 240  
 gctgtttcaa cggccaatcc actgcttagg atatttatac aaaagaagga agaagcagac 300  
 tacagtgcct ttggtacaga cacgctaata aagaagaaga atgttttaac caacgtattg 360

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cgtcctgaca accatagaaa aaagccacat atagtcatta gtatgccccca agacttttaga 420
cctgtgtctt ctattataga cgtggatatt ctcccagaaa cgcacgtag ggtacgtctt 480
tacaaatacg gcacggagaa acccctagga ttctacatcc gggatggctc cagtgtcagg 540
gtaacaccac atggcttaga aaaggttcca gggatcttta tatccaggct tgtcccagga 600
ggctctggctc aaagtacagg actattagct gttaatgatg aagtttttaga agttaatggc 660
atagaagttt caggggaagag ccttgatcaa gtaacagaca tgatgattgc aaatagccgt 720
aacctcatca taacagttag accggcaaac cagaggaata atgttgtgag gaacagtgcg 780
acttctggca gttccggtca gtctactgat aacagccttc ttggctaccc acagcagatt 840
gaaccaagct ttgagccaga ggatgaagac agcgaagaag atgacattat cattgaagac 900
aatggagtgc cacagcagat tccaaaagct gttcctaata ctgagagcct ggagtcatta 960
acacagatag agctaagctt tgagtctgga cagaatggct ttattccctc taatgaagtg 1020
agcttagcag ccatagcaag cagctcaaac acggaatttg aaacacatgc tccagatcaa 1080
aaactcttag aagaagatgg aacaatcata acattatga 1119

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<210> 138

<211> 372

<212> PRT

<213> Homo sapiens

<400> 138

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Met Asn Arg Ser His Arg His Gly Ala Gly Ser Gly Cys Leu Gly Thr
  1                      5                      10                      15

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```

Met Glu Val Lys Ser Lys Phe Gly Ala Glu Phe Arg Arg Phe Ser Leu
                20                      25                      30

```

```

Glu Arg Ser Lys Pro Gly Lys Phe Glu Glu Phe Tyr Gly Leu Leu Gln
                35                      40                      45

```

```

His Val His Lys Ile Pro Asn Val Asp Val Leu Val Gly Tyr Ala Asp
    50                      55                      60

```

```

Ile His Gly Asp Leu Leu Pro Ile Asn Asn Asp Asp Asn Tyr His Lys
    65                      70                      75                      80

```

```

Ala Val Ser Thr Ala Asn Pro Leu Leu Arg Ile Phe Ile Gln Lys Lys
                85                      90                      95

```

```

Glu Glu Ala Asp Tyr Ser Ala Phe Gly Thr Asp Thr Leu Ile Lys Lys
                100                      105                      110

```

```

Lys Asn Val Leu Thr Asn Val Leu Arg Pro Asp Asn His Arg Lys Lys
                115                      120                      125

```

```

Pro His Ile Val Ile Ser Met Pro Gln Asp Phe Arg Pro Val Ser Ser
    130                      135                      140

```

```

Ile Ile Asp Val Asp Ile Leu Pro Glu Thr His Arg Arg Val Arg Leu
    145                      150                      155                      160

```

```

Tyr Lys Tyr Gly Thr Glu Lys Pro Leu Gly Phe Tyr Ile Arg Asp Gly
                165                      170                      175

```

```

Ser Ser Val Arg Val Thr Pro His Gly Leu Glu Lys Val Pro Gly Ile
                180                      185                      190

```

```

Phe Ile Ser Arg Leu Val Pro Gly Gly Leu Ala Gln Ser Thr Gly Leu
    195                      200                      205

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Leu Ala Val Asn Asp Glu Val Leu Glu Val Asn Gly Ile Glu Val Ser  
 210 215 220  
 Gly Lys Ser Leu Asp Gln Val Thr Asp Met Met Ile Ala Asn Ser Arg  
 225 230 235 240  
 Asn Leu Ile Ile Thr Val Arg Pro Ala Asn Gln Arg Asn Asn Val Val  
 245 250 255  
 Arg Asn Ser Arg Thr Ser Gly Ser Ser Gly Gln Ser Thr Asp Asn Ser  
 260 265 270  
 Leu Leu Gly Tyr Pro Gln Gln Ile Glu Pro Ser Phe Glu Pro Glu Asp  
 275 280 285  
 Glu Asp Ser Glu Glu Asp Asp Ile Ile Ile Glu Asp Asn Gly Val Pro  
 290 295 300  
 Gln Gln Ile Pro Lys Ala Val Pro Asn Thr Glu Ser Leu Glu Ser Leu  
 305 310 315 320  
 Thr Gln Ile Glu Leu Ser Phe Glu Ser Gly Gln Asn Gly Phe Ile Pro  
 325 330 335  
 Ser Asn Glu Val Ser Leu Ala Ala Ile Ala Ser Ser Ser Asn Thr Glu  
 340 345 350  
 Phe Glu Thr His Ala Pro Asp Gln Lys Leu Leu Glu Glu Asp Gly Thr  
 355 360 365  
 Ile Ile Thr Leu  
 370

<210> 139  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:HIS6 epitope  
 tag

<400> 139  
 His His His His His His  
 1 5

<210> 140  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:T7-T24 oligo

<220>  
 <221> modified\_base  
 <222> (8)..(24)  
 <223> t at positions 8-24 may be present or absent

<400> 140  
ttttttttttt tttttttttttt tttt

24

<210> 141  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: endoplasmic  
reticulum retention sequence

<400> 141  
Lys Asp Glu Leu  
1